Apparel, Made-ups and Home Furnishing

NSQF Level 2 – Class X

Student Workbook



विद्ययाऽमृतमश्नुते

एन सी ई आर टी
NCERT

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PSS Central Institute of Vocational Education, Shyamla Hills, Bhopal

Student Workbook — Apparel, Made-ups and Home Furnishing

(Class X; NSQF Level 2)

March, 2017
Publication No.:

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Published by the Joint Director, PSS Central Institute of Vocational Education,
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Preface

The National Curriculum Framework, 2005, recommends that children's life at school must be linked to their life outside the school. This principle makes a departure from the legacy of bookish learning which continues to shape our system and causes a gap between the school, home, community and the workplace.

The student's workbook on "**Apparel, Made-ups and Home Furnishing**" is a part of the qualification package developed for the implementation of National Skill Qualification Framework (NSQF), an initiative of Ministry of Human Resource Development (MHRD), Government of India to set common principles and guidelines for a nationally recognized qualification system covering Schools, Vocational Education and Training Institutions, Technical Education Institutions, Colleges and Universities. It is envisaged that the NSQF will promote transparency of qualifications, cross-sectoral learning, student-centred learning and facilitate learner's mobility between different qualifications, thus encouraging lifelong learning.

The Pandit Sunderlal Sharma Central Institute of Vocational Education (PSSCIVE), a constituent of National Council of Educational Research and Training (NCERT) in association with subject experts has developed modular curricula for the vocational qualification package in Apparel, Made-ups and Home Furnishings sector for NSQF levels 1 to 4; which are equivalent to Class IX, X, XI and XII. Development of learning material based on the curriculum is under process. Student's workbook for Class IX has been submitted, present student's workbook is for Class X.

This student's workbook, which forms a part of vocational qualification package for students who have passed Class IX or equivalent examination, was developed by a group of experts. This student's workbook attempts to discourage rote learning and to bring about necessary flexibility in offering of courses, necessary for breaking the sharp boundaries between different subject areas. We hope these measures will take us significantly further in the direction of a child-centred system of education outlined in the National Policy of Education (1986).

I am grateful to the authors for the development of this book, whose names are given elsewhere. ***Dr. Pinki Khanna*, *Associate Professor*, *Department of Home Science and Hospitality Management*** deserves special appreciation and thanks for contribution and organization of working group meetings for development and finalization of the student's workbook and bringing out this title in the form as presented now.

It is expected that States/UTs will print limited copies of this student's workbook and make available to the students and detailed feedback will be taken from the students, teachers, examiners, etc. so the student's workbook will be improved accordingly.

I shall be grateful to receive feedback, suggestions and observations from readers which would help in bringing out a revised and improved version of this student's workbook.

(N. Pradhan)
Joint Director
PSS Central Institute of Vocational Education

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March, 2017

Acknowledgements

The contribution of the following experts in the development of this title is gratefully acknowledged.

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Apparel, Made-ups and Home Furnishing

NSQF Level 2 – Class X

HSA 201-NQ2014 : STUDY OF TEXTILES

Student’s Workbook









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पं.सुं.श.केन्द्रीय व्यावसायिक शिक्षा संस्थान, श्यामला हिल्स, भोपाल

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Introduction

The word "textile" originally applied only to woven fabrics, now generally applied to fibres, yarns, or fabrics and its products. The term textile originates from the Latin verb “texere” means “to weave” but, the Textile Institute's Terms and Definitions Glossary explains, as "a general term applied to any manufacture from fibres, filaments or yarns characterized by flexibility, fineness and high ratio of Length to thickness".

Majority of the fabric produced all over the world is used for clothing and furnishing purposes. Clothing is also required for other intimate uses such as modesty, protection, self-enchantment and self expression. The designing of textiles comes into consideration when consumers, industry, artists throw light on beautification, style, surface embellishment, decoration, value addition, promotion, and public demand. The promotion ultimately influences the production and marketability.

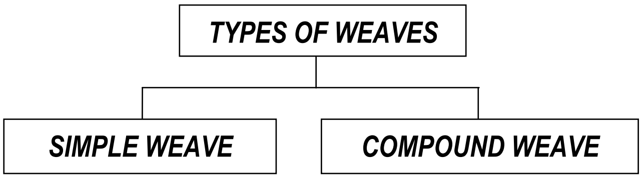
Session 1: Classification and Construction of Weaves

Relevant Knowledge

Weave structures form the basis of woven textiles. They are regular, repeated sequence of interlacement between warp and weft. While there are many types of structures, they can be categorized by basic components, including the repeat sequence of how the warp and weft float over and under each other and how many different groups of warps or wefts with different functions are involved in making the structure.

CLASSIFICATION OF WEAVES

In general, weaves can be classified into -Simple Weaves and Compound Weaves



A. Simple Weaves

In Simple weave, the warp and weft are aligned so they form a simple crisscross pattern. Each weft thread crosses the warp threads by going over one, then under the next, and so on as shown in Fig.1.1.The next weft thread goes under the warp threads and vice versa (Fig.1.1).

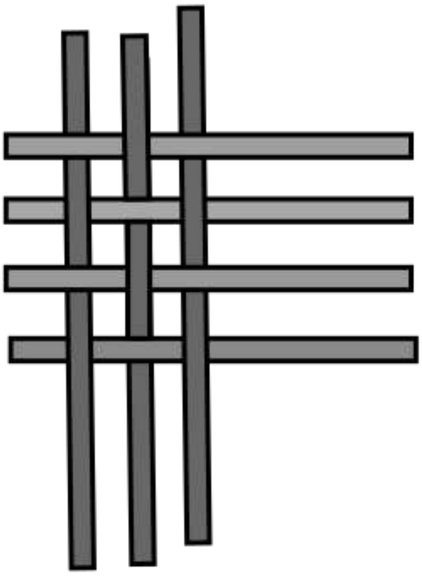
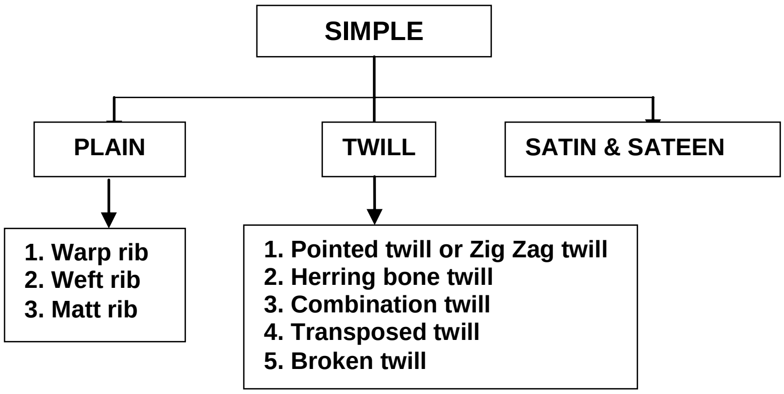


Fig 1.1 Simple Weave
Source: https://en.wikipedia.org/wiki/Plain_weave#/media/File:Plainweave.svg

Classification of Simple Weaves:
The simple weaves are classified into Plain, Twill, Satin and Sateen.



1. **Plain Weave:** Each warp interlaces with each filling at right angles. It can be balanced or unbalanced.
   a. **Balanced plain weaves** are fabrics in which the warp and weft are made of threads of the same weight (size) and the same number of ends per inch as picks per inch.
   b. **Unbalanced Plain weaves** have more yarns in one direction than the other. Increasing the number of warp yarns in a plain-woven fabric until the count is about twice that of the filling yarns creates a crosswise ridge called a filling rib. In such a fabric, the warp yarns completely cover the filling yarns. This type of fabric may be called warp faced because the warp yarns form the surface of the fabric. Warp-faced fabrics are more durable than filling-faced fabrics. Example – Rib Weave.

   Rib Weave in fabric can be produced by increasing the reed pressure (pushing more yarns into the same area) or by changing the yarn size. Small ridges are formed when the warp and filling yarns are the same size, larger ridges are formed when the filling yarns are larger than the warp.

   The three Types of Rib weaves are

   (i) Warp Rib: A warp rib results from extending the plain weave in the warp direction (Fig.1.2).

   (ii) Weft Rib: Weft rib structure results from extending the plain weave in the weft direction (Fig.1.3).

   (iii) Matt Rib: A matt rib results from extending the plain weave in both directions (Fig.1.4).

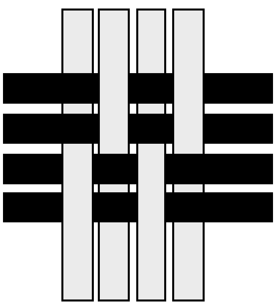


Fig.1.2 Warp Rib

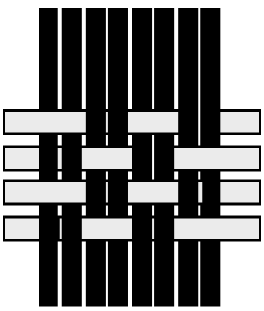


Fig.1.3 Weft Rib

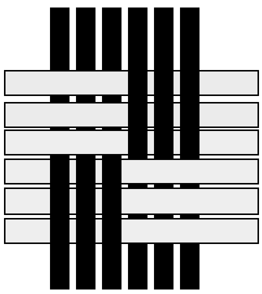


Fig.1.4 Matt Rib

(Source:http//wwwtextileschool4U.blogspot.com)

2. **Twill Weave:** Twill weave is a type of textile weave with a pattern of diagonal parallel ribs (in contrast with a satin and plain weave). This is done by passing the weft thread over one or more warp threads then under two or more warp threads and so on, with a "step," or offset, between rows to create the characteristic diagonal pattern. In a twill weave, each weft or filling yarn floats across the warp yarns in a progression of interlacing's to the right or left, forming a pattern of distinct diagonal lines. This diagonal pattern is also known as a wale. A float is the portion of a yarn that crosses over two or more perpendicular yarns (Fig.1.5).

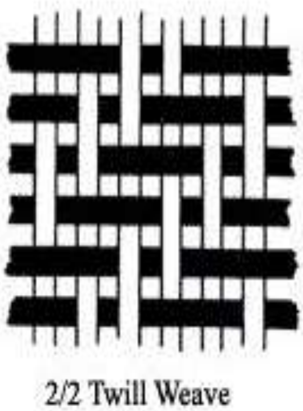


Fig 1.5 Twill weave
Source:http//www.pininterest.com

Twill weaves are classified into the following types:

- Pointed twill or Zig Zag twill
- Herring bone twill
- Combination twill
- Transposed twill
- Broken twill

Pointed twill or Zig Zag twill: In zigzag twills the diagonal line proceeds either to the left or right. Where two lines meet they create a point, forming a continuous zig-zag effect in the fabric. It is the most important modification of twill weave produced by reversing the direction of twill. Zig-zag is produced by the combination of S-Twill & Z-twill (Fig.1.6).

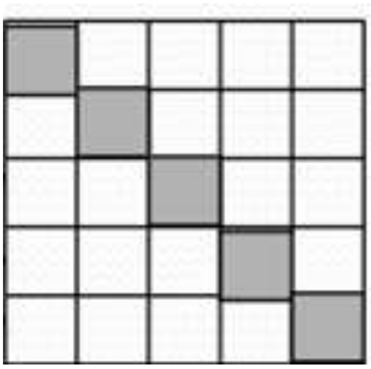


Fig.1.6 Pointed twill or Zig Zag twill
Source:http://niterians.blogspot.in/2016/07/zig-zag-or-pointed-twill-weave.html

Herring bone twill: A pointed draft is used to create a herringbone twill weave structure, causing the diagonal twill line to change direction intermittently, forming zig zag line. This structure is also known as chevron (Fig.1.7).

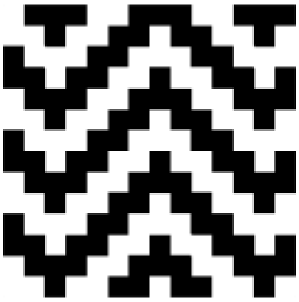


Fig.1.7 Herring bone twill
(Source: http://propercloth.com/reference/twill/)

Combination Twill Weave: Combined twill are formed by combination of two continuous twill. According to this combination, there are two types of combined twill, such as warp-way combined twill and weft-way combined twill. In combined twill no practical limitations exist and varieties of design can be produced. It may be both warp face and weft face. It is capable of producing compact and firm textures.

Transposed Twill Weave: In the case of these twills the diagonal effect is broken by transposition of the original order of the threads. This type of construction produces attractive designs. A number of methods can be adopted in the transposition of the regular twills (Fig.1.8).

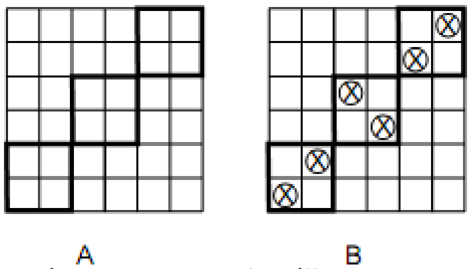


Fig.1.8 Transposed Twill Weave
(Source:http://www.textileschool.com/articles/147/transposed-twills)

Broken Twill Weave: These twills are constructed by breaking the continuity of any continuous twill weave. The continuity can be broken in either a regular or an irregular order. Broken twills generally give a stripe like effect. The direction of the stripes can tend to be in either the direction of warp or weft accordingly as the continuity is broken warp or weft way (Fig.1.9).

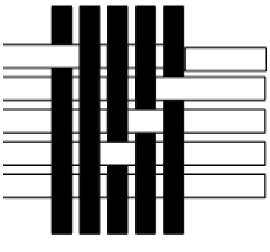


Fig.1.9 Broken Twill Weave
(Source: http://www.textileschool.com/articles/135/broken-twills)

3. **Satin and Sateen Weave:** Satin is a warp faced rearranged twill and sateen is a rearranged weft faced twill. Satin is a weave that typically has a glossy surface and a dull back. The satin weave is characterized by four or more fill or weft yarns floating over a warp yarn or vice versa, four warp yarns floating over a single weft yarn. A satin fabric tends to have a high luster due to the high number of floats on the fabric. Because of this it is used in making bed sheets. Satin is commonly used in apparel: satin baseball jackets, athletic shorts, women's lingerie, nightgowns, blouses, and evening gowns, but also in some men's boxer shorts, briefs, shirts and neckties. It is also used in the production of Pointe shoes for use in ballet. Other uses include interior furnishing fabrics, upholstery, and bed sheets (Fig.1.10).

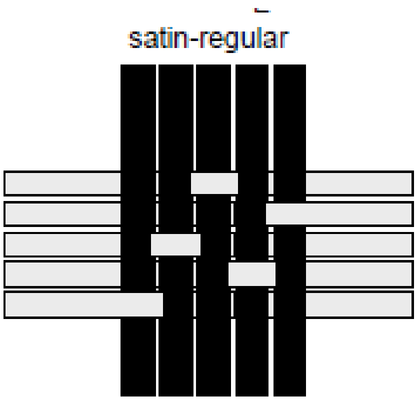


Fig.1.10 Satin
(Source: http://textileschool4u.blogspot.in/2013/12/satin-and-sateen-weaves.html)

Sateen Weave: Sateen is a fabric made using a satin weave structure but made with spun yarns instead of filament. The sheen and softer feel of sateen is produced through the satin weave structure. Warp yarns are floated over weft yarns, for example four over and one under. (In a weft-faced satin or sateen, the weft yarns are floated over the warp yarns). Standard plain weaves use a one-over, one-under structure. The long floats produce a surface that is smooth to the touch and reduces light scattering to increase shine. This weave structure is more susceptible to wear than other weaves (Fig.1.11).

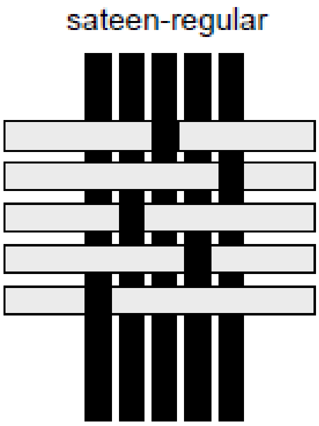
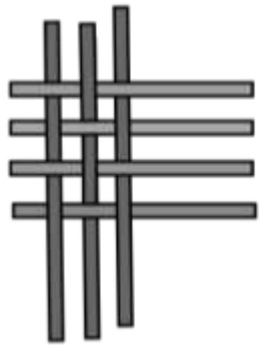


Fig.1.11 Sateen
(Source:http://textileschool4u.blogspot.in/2013/12/satin-and-sateen-weaves.html)

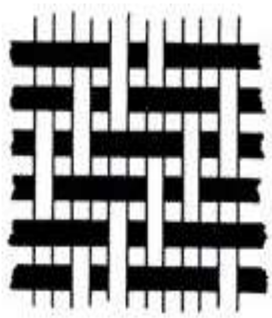
ACTIVITY-1



Aim: To make plain Weave using Quilling Paper
Material Required: Quilling Paper

Steps to be followed
1. Choose the contrast colour quilling paper.
2. Cut stripes of equal length and width.
3. Arrange the quilling stripes in a vertical way.
4. Interlace the other quilling stripes in horizontal way (1x1).
5. Repeat the same arrangement.

ACTIVITY-2



2/2 Twill Weave

Aim: To make Twill Weave using Quilling Paper
Material Required: Quilling Paper

Steps to be followed
1. Choose the contrast colour quilling paper.
2. Cut stripes of equal length and width.
3. Arrange the quilling stripes in a vertical way.
4. Interlace the quilling stripes in horizontal way (2x2) in diagonal direction.
5. Repeat the same arrangement.

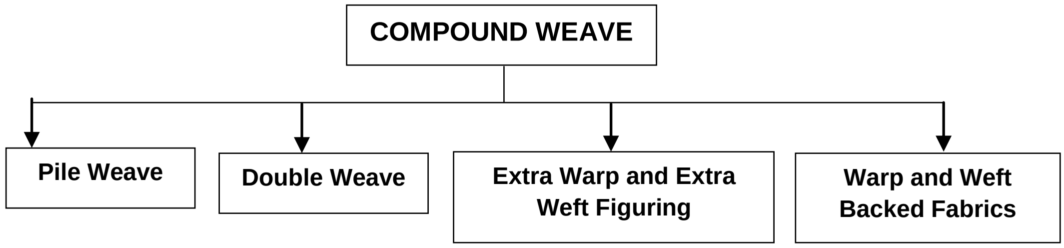
B. Compound Weaves

Any type of woven structure which involves more than two sets of elements - such as one (or more) warp sets, plus two (or more) weft sets, which are manipulated through different pathways to create a pattern.

Compound weaves are formed in several fundamental ways. One way is to use a single complementary set in one direction (either warp or weft) that has a single function, but with multiple colors of yarns and two sets of the opposite (warp or weft) direction that function differently from one another. Of these one set performs a structural function by binding the weave structure (for example in twill weave) while the others acts as a separator for the multiple-colored yarns, allowing colors to be selected for the pattern, maintaining them on the front surface of the textile, while keeping the others to the back, all the while being bound by the first set.

The second fundamental type of compound weave uses two or more completely different sets of warps and wefts to create separate but interconnected textile structures. These can result in a textile with multiple layers that intersect according to the pattern to form a unified textile as in Double cloth.

Classification of Compound Weave:
Compound weaves are classified into Pile weave, double weave, Extra warp and Extra Weft figuring and warp and weft backed fabrics.



1. **Pile Weave:** A type of decorative weave in which a pile is formed by additional warp or filling yarns interlaced in such a way that loops are formed on the surface or face of the fabric. The loops may be left uncut, or they may be cut to expose yarn ends and produce cut pile fabric. The family of pile weaves includes terry cloth, velveteen, plush, and similar weaves in which a portion of the warp is extended to form an elongated, extended path from the flat plane of the fabric. Terry weave fabrics are traditionally used as house ware items for bath towels, mats, washcloths, and robes, but are occasionally used for apparel items such as beachwear. Other pile weave fabrics are usually associated with winter wear clothing items because of their softness and warmth.

2. **Double Weave:** Double cloth or double weave is a kind of woven textile in which two or more sets of warps and one or more sets of weft or filling yarns are interconnected to form a two-layered cloth. Its end use is for Blanket, coatings and upholstery.

3. **Extra Warp and Extra Weft Figuring: Extra Warp:** Basically two sets of yarn i.e. warp and weft form the ground weave and an extra set of warp yarns form additional warp pattern created over the ground weave structure. Often extra warp figures are parallel to selvedge, like border figures which are more popular in Indian sarees.
   - **Extra Weft:** Extra weft figured fabrics may be formed with one, two or more extra weft picks in addition to the ground weft. Only one series of warp threads is used and the effect is obtained by floating the extra weft where desired on the face of the ground cloth produced by the interlacing of the warp with the ground weft in plain or in some other simple weave order. Weaving machine used for this purpose must have the capacity to insert more than one kind of weft.

4. **Warp and Weft Backed Fabrics:** The backed fabrics are those types which employ a face and back weave alternatively on the two sides of the cloth. These weaves may be of a reversible or non-reversible nature. These types of fabrics are mainly constructed for two purposes:
   - Increasing the warmth retaining qualities of the cloth
   - Secure a greater weight and substance that can be acquired in a single structure which is equally fine on the surface.

     Warp backed fabric: These fabrics are produced by alternately weaving two similar or different warp faced weaves. The objective of such a technique is to get greater thickness or mass of the fabric without using coarser yarns.

     Weft Backed Fabrics: In these types of fabrics two series of weft threads and one series of warp threads are used.

END USES OF WEAVES

The end uses of different types of weaves are given below:

S.NO	TYPE OF WEAVE	END USES
1	PLAIN	Plain weave finds extensive uses. It is used in cambric, muslin, blanket, canvas, dhoti, sari, shirting, suiting, etc.
2	RIB	Rib weaves are used in gross grain cloths, repp cloth which extensively employed for window blinds in railway carriages & other vehicles, upholstering furniture, & cambric picket handkerchief.
3	MATT WEAVE/BASKET WEAVE	Matt weave finds extensive uses for a great variety of fabrics such as dress materials, shirting, sail cloth, Duck cloth, etc
4	TWILL WEAVE	Twill weaves finds a wide range of applications such as drill cloth, khaki uniforms, denim cloth, blankets, shirting, hangings & soft furnishings.
5	SATIN AND SATEEN	Sateen/Satin weaves finds a wide range of applications such as drill cloth, denim, interlining cloth, ribbons, dress materials (lustrous), children's dress materials, etc.
6	PILE WEAVE	Cut and uncut pile fabrics ranging from toweling to rugs.
7.	DOUBLE WEAVE	Blanket, coatings, upholstery
8	EXTRA WARP AND EXTRA WEFT FIGURING	Border figures
9	WARP AND WEFT BACKED FABRICS	Increasing the warmth retaining qualities of the cloth

Exercise

Assignments

1. Construct Plain weave, Twill weave and sateen weave with colored paper strips or satin ribbons in the dimension of 6"X8" and paste it in your scrape book.
2. Identify Different types of weave using pick glass
3. Collect different types of weaves ,touch and feel the fabric for its end uses

Assessment

Answer the following questions:

1. Classify weaves?
2. Classify simple weaves
3. Classify Compound Weaves
4. Draw the structure for the following weaves:
    - Plain weave

- Warp rib
- Weft rib
- Twill weaves
- Satin weave

Fill in the blanks

1. ------------- are fabrics in which the warp and weft are made of threads of the same weight and the same number of ends per inch as picks per inch.
2. ---------- results from extending the plain weave in the warp direction.
3. -------------- is a type of textile weave with a pattern of diagonal parallel ribs.
4. -------- is a warp faced rearranged twill and ---------- is a rearranged weft faced twill.

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A

Explained classification of weaves.
Explained classification of simple weaves.
Explained classification of compound weaves.

Part B

Discussed in class the following:
a) Types of Simple Weaves
b) Types of Compound Weaves.

Part C

Performance Standards
The performance standards may include, but not limited to:

Performance Standards	Yes	No
Structure of simple weaves		
Types of Compound Weaves		

Session 2 : Fabric Finishes

Relevant Knowledge

Finishing is a series of processing operations applied to a textile material to improve it's appearance, handle and functional properties. Finishing is the last stage of fabric processing. It covers a wide range of processes which make an unattractive fabric turn into an attractive one. Finishing properties are carried out to improve the natural properties or attractiveness of the fabric and to increase its serviceability. It is possible to carry out finishing at different stages of textile production. Thus, a fibre, yarn, fabric or garment can be subjected to the finishing process, though most efficient results are obtained at the fabric stage.

A finish is a treatment given to a fabric, to change its appearance, handling /touch or performance. Its purpose is to make the fabric more suitable for its end use. A fabric finish is applied to a fabric once it has been made to improve its appearance, feel or other properties.

Finish includes any general treatment given to clean and iron fabrics and create exclusive variations of them by using chemical treatments, dyeing, printing, etc. When no finish is applied on the textiles, these are termed as gray goods or unfinished textiles. This does not mean that the fabric is gray in colour. It implies that no finishing treatment has been given to it. When a fabric is given a finish, it is known as a finished textile.

ADVANTAGES OF FABRIC FINISHES

Textile finishes are important because of the following reasons. The finishes help to:
- Improve the appearance of fabric and enhance its looks
- Produce variety in fabrics through dyeing and printing
- Improve the feel or touch of fabric
- Make the fabric more useful
- Improve the draping ability of light weight fabrics
- Make fabric suitable for an end (specific) use.

CLASSIFICATION OF FABRIC FINISHES

The fabric finishes are classified into two types they are as follows

1. Basic finishes
2. Functional finishes

1. Basic Finishes

Basic or common finishes are applied to almost all the fabrics, with an aim to improve their appearance, feel and body. Pale white cotton fabrics may be bleached to improve their whiteness. For better look of a thin cotton fabric, starch is applied to increase its weight and shine. Steam Ironing, Calendaring (industrial ironing) is a basic finish. These are also known as aesthetic finishes.

The basic finishes are further classified into two classes:
A. Finishes that appeal to the eye
B. Finishes that appeal to the touch

A. Finishes that appeal to the eye

*(i) **Singeing:*** Singeing is one of the first essential preparatory processes that impart smooth finish to fabric. Singeing burns off lint, threads, fuzz and fibre ends and leave an even surface before the fabric passes through other finishing processes or a printing operation. Singeing is designed to burn off the surface fibres from the fabric to produce smoothness. The fabric passes over brushes to raise the fibres, and then passes over a plate heated by gas flames.

(ii) Bleaching: Bleaching process can be defined as; the destruction of natural colouring matter from the textile materials in order to achieve a clean white end product. Bleaching can be done in the yarn stage as well as in the constructed fabric. Suitable bleaching agents are used to remove the colour from the fabric namely oxidizing or reducing bleaches. Bleaching is done for the cotton, woolen and silk. Man-made fabrics do not need bleaching, as they are naturally white. The kind of chemical to be used depends upon the kind of textile fibre of which the fabric is composed.

(iii) Mercerizing: Mercerization is the treatment of cotton with a strong caustic alkaline solution in order to improve the luster, hand and other properties. It was named after its discoverer John Mercer. Mercerizing is an important preparatory process for cotton fabric. It is also used in the finishing of linen. Mercerizing causes the flat, twisted, ribbon like cotton fibre to swell into a round shape and to contract in length.

(iv) Shearing: Shearing is an important preparatory stage in the processing of cotton cloth. The objective of "Shearing" is to remove fibres and loose threads from the surface of the fabric, thus improving surface finish. Shearing is done by a machine which has rotating cylinders and helical blades. Its action resembles that of a lawn mover. After shearing, the fabric is automatically brushed to remove the sheared ends of the yarns. (Fig.1.11a and b).

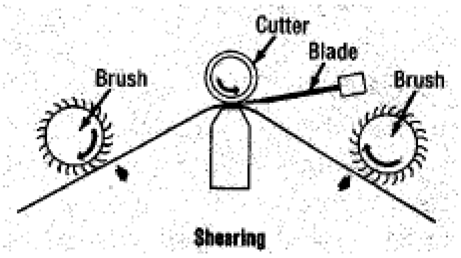


Fig.1.11a Process of Shearing



Fig.1.11b Pattern Shearing

(Source : http//textile engineer. Blog)

(v) Calendering: Calendering is essentially an ironing process that adds sheen to the fabric. The method varies according to the type of finish desired. Calenders are heavy machines made up of at least two rolls. One is usually of chilled steel; the other, a softer material like wood, paper, cotton fibre, corn husks or combinations of cotton and corn husk. The textile material is passed through the calendering machine rapidly between the gap formed by the rollers. This is done at an average rate of 150 yards (135m) per minute, and under pressure of 40 to 60 tons; the goods are then wound up on the back of the machine (Fig.1.12).

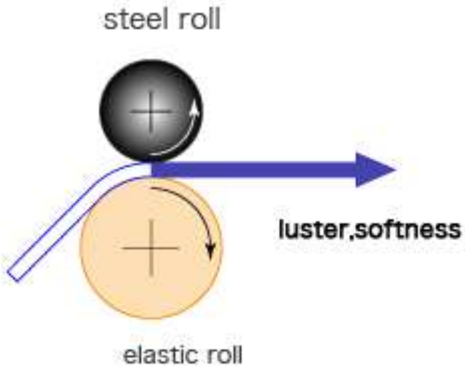


Fig.1.12 Calendering
(Source: http//achoogalery.com)

(vi) Pressing: Mostly pressing method is used for wool fabrics to remove short hair fibres present on the surface of the fabric. This pressing method is similar to calendering.
(vii) Embossing: The process of producing raised figures or designs in relief on the surface of the fabrics by passing the cloth between heated engraved rollers is known as embossing. The process can be applied to the fabrics made of all types of fibres except the wool. To preserve the embossed finish of such fabrics, they should be washed in lukewarm water with a mild soap, never be bleached, and ironed on the wrong side while damp.
(viii) Crepe and Crinkled effect: Permanent crepe effects are obtained by using hard twisted yarns in the weaving process. Another method imprints a crinkled effect by means of engraved rollers, but the finish disappears in repeated washing. In another finishing method, caustic soda is impressed on the cotton fabric in the form of figures or stripes and the fabric is then washed. The part imprinted with the caustic soda shrinks, and the other part puckers.

A permanent crinkle may be obtained on a fabric that can melt, such as nylon. The fabric is put through a hot roller on which there are raised figurations. The contact of the fabric against the raised hot surface helps it to melt and pucker at these points.

B. Finishes that appeal to touch

Some of the changes given to the fabric for softness, weight, crispness and warmth are known as finishes that appeal to touch.
(i) Napping: Napping is chiefly used to obtain a relatively deep hairy surface, but the degree of depth depends upon the technique used. The fabric is passed under a roller that has fine steel wires with small hooks on the ends. The hooks scrape the surface of the fabric pulling up fibre ends out of the yarn. The fuzzy finish, produced by napping makes a soft fabric that holds warmthness.
(ii) Weighting: Silk may be treated with tin salts to increase the weight of the fabric and improve its hand and drape. The weight and body of the fabric, is increased by immersing it in a solution containing metallic salts. The salts permeate the yarns and become a permanent part of the fabric but cannot be detected by handling. If excessive metallic salts are used in the weighting, it may weaken the fabric.
(iii) Starching: Glue, wax, casein, starch and clay are used for cotton fabrics to give weight, stiffness and shiny appearance. Starch is applied on the fabric and passed between two rollers. Wax and oil are mixed together to the starch solution to give the shiny appearance to the fabric. Starching is a temporary finish.

(iv) Sanforizing: Fibres spun into yarn are under constant tension during the weaving process. The yarns are made to assume a final condition by shrinking the fabric in a preparatory finishing process that minimizes subsequent shrinkage such as immersion in cold water. The factors that control the shrinkage are the stability of the fibre and the construction of the fabric. Construction is based on the type of the weave, the yarn twist and the yarn count.

The piece of fabric is taken and measured and then immersed in the water and the shrinkage of the fabric is calculated. Then the fabric is passed through the machine to make it shrink as to a desired measurement. This is known as sanforizing.

Activity

Organize a visit to textile industry to see the different types of Basic Finishes.

2. Functional Finishes

Functional finishes are imparted to fabrics, considering the functional use of the fabric, are known as special or functional finishes.

The special finishes are applied to improve the performance of a fabric for some specific purpose, for example

- fireproof finish prevents the burning of fabrics
- waterproof finish makes fabrics water repellent
- bulletproof finish on fabric saves the people from bullets and is generally used by defense and police personnel for their safety
- Crease-resistant finish makes cotton / wool fabric wrinkle resistant.

(i) Absorbency finish: Although the cellulose fibres like cotton, linen and rayon have good absorbency, sometimes it is desired that they should be more absorbent. Appropriate application of ammonium compounds modifies the cellulose to become more absorbent, providing greater comfort and usefulness for such uses as undergarments and towels.

(ii) Wrinkle resistant finish: These finishes are also sometimes referred to as “crease-resistant” or “Wash and wear” finishes. DMDHEU namely Dimethyl Dihydroxy Ethylene Urea is used to impart wrinkle resistant finish on the textiles. The purpose of this finish is to prevent deformation of the fabric by undesirable and unintentionally introduced folds and rumples. Some finishes are more wrinkle-resistant than others but fabrics treated with any of these finishes tend to smooth out when properly hung after wearing.

(iii) Flame retardant finish: A wide variety of flame retardant chemical finishes have been developed for application to fibres and fabrics. Carbonate and ammonium salts are used for flame retardant finish.

(iv) Antibacterial finish: Chemical antiseptic finishes using Chitosan, impart a self-sterilizing quality to a fabric. The appearance and the feel of the fabric does not change and no chemical odour remains. Dry cleaning does not impart the finish.

(v) Prevention of mildew: Cellulose fibres are particularly susceptible to mildew. Silk and wool are also susceptible, but to a lesser extent. Such untreated fabrics will become stained, malodorous and eventually deteriorated by the fungus if allowed to remain in a moist condition for a period of time.

Shower curtains or other fabrics may be mildew proofed at home by soaking the material in soapy water, then without rinsing, dipping it into a solution of boric acid and

carbolic acid, which prevents rapid growth of the mildew fungus. The most effective mildew proofing agent is 0.05 per cent solution of phenyl mercuric acetate in water.

(vi) Water repellent finish: The fibres in the fabrics become covered with a film of synthetic resin. This repels and delays adsorption and penetration of water through the fabric. This finish allows air to permeate the fabric, and its comfort is largely retained in contrast with the water proof finishes.

Most of the original water proof finishes, produced by the application of rubber, waxes and oxidised oils, have been replaced by applying impervious films of polyvinyl chloride - PVC plastic. The low cost of this type of application, associated with the very light weight of the water proof fabric produced, compensates for the lack of comfort in the garment produced.

(vii) Waterproof finish: Waterproof finish is a functional finish. For a fabric to be truly waterproof, it must be completely sealed with a substance that is insoluble in water. Modern waterproofing materials include the vinyl resins, which do not oxidize and crack as readily as rubber.

Exercise

Collect samples of the following finishes and paste it in a file:

- Water proof
- Starching
- Shearing
- Mercerization

Assessment

1. What is a finish? Why is it necessary to apply on fabric?
2. Give the classification of finishes?
3. How do gray fabrics differ from finished fabrics?
4. Describe any two basic finishes and their uses.
5. Describe any two functional finishes and their uses.
6. The sewing thread Sita brought had the label mercerized? Give the advantages of ‘mercerization’ and explain the process of mercerization to Sita.

Fill in the blanks after unscrambling the clues in the brackets:

i. The treatment given to fabrics to enhance their appearance, performance or handling is known as __________ (N I F S I H E).
ii. When no finish is applied to fabrics, it is known as ____________ fabric (R A Y G).
iii. Waterproof finish is a__________________ finish. (N C F U T I O N A L).

State True or False and explain if the answer is false.

(i) Calendaring is a finish used to iron the fabric. (True / False)
(ii) Bleaching has no damaging effect on fabric. (True / False)
(iii) Mercerized thread should be used for stitching. (True / False)

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A
(a) Explained fabric finishes.
(b) Explained basic finishes.
(c) Explained functional finishes.

Part B
Discussed in class the following:
(a) Various basic finishes.
(b) Various functional finishes.

Part C
Performance Standards
The performance standards may include, but not limited to:

Performance Standards	Yes	No
Identification of different types of fabric finishes.		
Preparing a chart from photographic samples of various types of fabrics.		

Session 3 : Selection of the Fabric as per the Utility

Relevant Knowledge

Choosing fabric for garments is the most important step in sewing a garment. Fabric selection is one of the most crucial steps in designing garments. A fabric manufactured for one purpose, may not be adaptable for another use. Therefore selecting the appropriate fabric is the first step for garment manufacturing. Designers specify the fabric as part of their design concept. Designers may develop new styles for fabrics that have been successful.

Types of Fabrics commonly used for Garment Construction

- **Cotton voile:** Voile is a lightweight, semi-sheer fabric with a great drape.
- **Cotton lawn:** Lawn is very similar to cotton voile but is slightly crisper.
- **Rayon challis:** Rayon challis is a smooth, lightweight fabric. It drapes well and is slightly heavier than other lightweight fabrics, like cotton voile and cotton lawn.
- **Chambray:** Chambray is another smooth, lightweight fabric. It doesn't drape as rayon challis, cotton voile or cotton lawn.
- **Denim:** Denim is a heavy-weight fabric with very little drape or stretch.
- **Double gauze:** Double gauze is a unique fabric. It is literally two layers of gauze woven together. The double layer of fabric eradicates the main problem of sewing clothing from gauze (the sheerness), while retaining the good qualities (extremely light and breathable).
- **Knit:** In the knit fabric category, there are several types of knit, varying from lightweight to medium weight. Knit fabric is for any garment that needs to have a great deal of stretch. Patterns are designed for either woven fabric or knit fabric, and patterns sized for knit fabric will often specify the degree of stretch needed in the fabric.
- **Silk:** Silk is a lightweight, delicate fabric that drapes well. It has a slightly shimmery appearance. Silk can be slippery and more difficult to work with.
- **Satin:** Satin can vary from lightweight to heavyweight, depending on the type of satin. Like silk, it has a glossy appearance.
- **Linen:** Linen is a medium-weight fabric with little elasticity. It is a popular choice for warm-weather anything.
- **Wool:** There are over 200 different types of wool, coming from 40 different breeds of sheep, so the weight will vary depending on the type of wool. It is also very warm and a good choice for colder weather garments.
- **Flannel:** Flannel is a soft, lightweight fabric. It works well for colder-temperature.

Some common fabrics for various garment purposes

- **Trousers/ Pants:** linen (for warmer weather); denim, flannel, and wool (for cold weather).
- **Shirts and T-Shirts :** cotton voile, rayon challis, double gauze, knit, silk, chambray, cotton lawn, linen, and flannel (for less drapey shirts and blouses).
- **Skirts:** cotton lawn, rayon, denim, knit, and linen.
- **Dresses:** cotton voile, cotton lawn, rayon challis, double gauze, knit, silk, satin, linen, and wool (for colder weather)

- **Suits and Coats:** wool, linen
- **Saree Blouses:** cotton, voile, rayon, silk
- **Gown:** cotton, rayon, silk, satin
- **Capes:** wool, fleece, cotton
- **Jackets:** cotton, wool, flannel, rayon, leather, fleece, fur
- **Shorts:** cotton , denim, corduroy
- **Inner Wear:** knit, cotton, lycra
- **Over Coat:** cotton, leather, wool, linen, velvet, corduroy
- **Blazers:** wool, terry cotton, terry wool
- **Leggings :** cotton, lycra
- **Pyjamas :** cotton, silk, terry cotton, linens
- **Night Gowns:** cotton, silk, sateen
- **Bermudas:** cotton, corduroy
- **Lehanga:** silk, crepe, georgette, net, velvet, brocade
- **Polo T-shirts :** cotton, wool, linen
- **Track pants:** cotton, lycra
- **Kurtis :** cotton, silk, chiffon, georgette, crepes, terry-cotton, linen, khadi
- **Rompers:** cotton, flannel, cots wool
- **Baby frocks :** cotton, silk, chiffon, georgette, crepes, terry-cotton, linen
- **Tutus:** nets, satin, chiffon
- **Divided skirt :** cotton, chiffon, linen
- **Wrap around Skirts:** cotton, chiffon, linen

Activity

Collect five different suitable fabrics for Men, women and Children garment and paste it in a chart.

Exercise

Collect pictures of the following and paste it in the file:

- Night Gown
- Bermudas
- Coat
- Blazers
- Skirts
- Jackets
- Blouses

Assessment

1. List any ten Fabrics commonly used for Garment Sewing.
2. What do you mean by Chambray Fabric?
3. What do you mean by Flannel Fabric?

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A
a) Explained types of fabric commonly used for garment sewing.
b) Explained common fabrics used for various garment purposes.

Part B
Discussed in class the following:
a) Various Types of Fabric.
b) Different types of garment

Part C
Performance Standards
The performance standards may include, but not limited to:

Performance Standards	Yes	No
Explain different types of fabric used for garment construction.		
Preparing a chart from photographic samples of various types of fabrics for various garments.		

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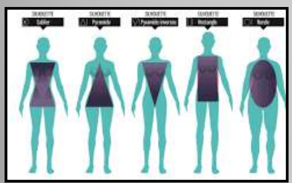
Apparel, Made-ups and Home Furnishing

NSQF Level 2 – Class X

HSA 202-NQ2014 : GARMENT DESIGN

Student's Workbook









विद्ययाऽमृतमश्नुते

एन सी ई आर टी
NCERT

पं.सुं.श.केन्द्रीय व्यावसायिक शिक्षा संस्थान, श्यामला हिल्स, भोपाल

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Introduction

Designers conduct research on fashion trends and interpret them for their audience. They attempt to design garments which are functional as well as aesthetically pleasing. They consider who is likely to wear a garment and the situations in which it will be worn. They have a wide range and combinations of material to work with and a wide range of colours, patterns and styles to choose from. Some clothes are made specifically for an individual, as in the case of Haute couture or bespoke tailoring. Designers have to study the demographic segmentation to understand the market.

In demographic segmentation the market is divided into groups on the basis of variable such as age, gender, occupation, education, religion, race, generation, nationality and social class. Demographic variables are the most popular basis for distinguishing customer groups. One reason is that consumer wants, preferences and usage rates are often associated with demographic variables.

The knowledge of colour, shapes and silhouettes is very significant for designers so as to design garments for people with different body types and complexion. Colors and silhouette variations help in creating a lot of illusions in garment thereby giving an overall pleasing look.

Session 1: Classification of Garments

Relevant Knowledge

Clothing is a basic human need for the body as well as a way to beautify ones overall appearance. Clothing is a need as well as a want. It is important because it reflects an individual's culture, personality and preferences. People use garments to enhance personal appearance and protect the body from extreme temperatures. People often form first impressions based on what a person wears. Factors that affect the buying of garments vary from person to person and from day to day. There are both rational and emotional factors. Some are given below:

1. To be fashionable: People may buy new clothing to feel that they are trendy or at least in the mainstream of fashion. They may discard clothing that is still wearable only because it is out of fashion.
2. To be attractive: Consumers want clothes that are flattering, that make them look their best or show off their physical attributes.
3. To impress others: People may want to project a successful image or establish unique identities with fashion. They may want to exhibit their taste level or income level through clothing.

Clothing is now available for all occasions and life styles. Manufacturers specialize in clothing type, age of target customer, price range and gender. Retailers have separate departments for each category, price range, and size range.

CLASSIFICATION OF GARMENTS

The garments are classified as:

1. **Women's Wear**
    - Dress
    - Gown
    - Suit
    - Outer Wear
    - Active Wear- Fitness Wear, Swim Wear, Sports Wear
    - Lingerie
    - Traditional Wear
2. **Men's Wear**
    - Tailored Clothing
    - Sports Wear
    - Work Clothes
    - Casual Wear
3. **Children's Wear**
    - Dresses for girls
    - Dresses for boys
    - Children Sports Wear
    - Children Outer Wear
    - Children Sleepwear

Women's Wear

Women's wear mainly includes dresses, social apparel, suits, outerwear, sports wear, active wear and lingerie. Special categories include bridal gowns and maternity clothes, and a huge array of accessories.

- **Dresses** are single garments or two pieces on the same hanger priced as one unit. Styles range from tailored to simple; business to casual wears (Fig.2.1).



Fig.2.1 Dress
(Source- http://www.zappos.com/images/z/2/8/7/5/0/9/2875097-p-4x.jpg)

- **Social Apparel** includes special occasion apparel such as long and short cocktail dresses, dressy pant ensembles, evening and bridal gowns (Fig.2.2).



Fig.2.2 Gown
(Source- https://s-media-cache-ak0.pinimg.com/564x/16/4c/75/164c75ea7cd30b8e813033718bd2859e.jpg)

- **Suits** are jackets and skirts/pants sold together as units. Suits range from casual to tailored. This type of dressing can be used as casual dressing as well as professional office wears (Fig.2.3).



Fig.2.3 Suit
(Source- https://s-media-cache-ak0.pinimg.com/236x/1f/50/36/ 1f503636316555e604d524f28ddbe575.jpg)

- **Outerwear** includes coats, capes and jackets with a primarily protective function (Fig.2.4).



Fig.2.4 Outer Wear
(Source- http://www.oldnavy.com/products/res/thumbimg/plaid-frost-free-vest-for-women-black.jpg)

- **Active wear** is one of the hottest categories of apparel today, fueled by the popularity of sports. Active wear is subcategorized into two segments.
  i. Fitness wear - worn for exercise (Fig.2.5)

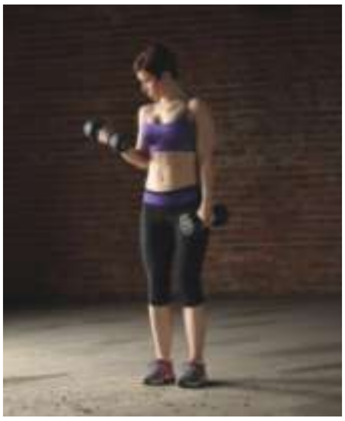


Fig.2.5 Fitness wear
(Source-http://st.gde-fon.com/wallpapers_original/605454_girl_sports_sportswear_activewear_fashion_ leggins__5184x2916_www.Gde-Fon.com.jpg)

ii. **Sportswear-** worn to play sports. Any combination of tops and bottoms, such as jackets, skirts, pants, shorts, blouses and shirts(Fig.2.6) that are priced separately so that the customer can combine them as desired.



Fig.2.6 Sports Wear
(Source-http://cdn7.facegfx.com/psd/wp-content/uploads/2013/6/4/peak-sportswear-poster-psd.jpg)

- **Swimwear** includes one piece suits, bikinis, sarongs and cover ups (Fig.2.7).



Fig.2.7 Swimwear
(Source-https://s-media-cache-ak0.pinimg.com/564x/d0/bb/de/d0bbde33bdd1ebb14ae38da97efb3ccf.jpg)

- **Lingerie** includes inner wear, body wear, sleep wear and loungewear.
- **Traditional Wear** includes Sari, Salwar kurti, Lehanga choli, Anarkali chudidar for both casual and special occasions. In India, traditional garments have a lot of significance while cultural events, festivals and fairs (Fig.2.8).



Fig.2.8 Traditional Wear
(Source-3.bp.blogspot.com/-aZv5uiUT29Q/UjNWgn91vYI/AAAAAAAAyac/mk-vdsav6Bo/s640/Manav.jpg)

Men's Wear

Men's wear has changed as a result of changes in their interest and more casual lifestyle. Traditionally, men look for quality, fit and durability. Their wardrobes formerly were limited to suits, track pants and sports shirt now have expanded along with their activities and increased clothing choices which has made them more fashion conscious.

- **Tailored clothing** includes suits, tuxedos, over coats, topcoats, sport coats, and separate trousers for business and evening wear (Fig.2.9)



Fig.2.9 Tailored Clothing
(Source-http://ndl.mgccw.com/mu3/app/20140809/00/1407523743700/ss/1_small.png)

- **Sportswear** comprises of sport jacket, knit, or woven related separates and casual trousers that fill the demand for more leisure and casual wear (Fig.2.10).



Fig.2.10 Sports Wear
(Source-https://image.freepik.com/free-photo/man-running-up-the-stairs_1098-2770.jpg)

- **Work clothes** are available in a wide range as per the various jobs and occupations. Work clothes mainly include overalls for labourers, work shirts and pants for job oriented males and formal suits for business wear. At some work places, clothes are worn as per the dress code like uniforms (Fig.2.11).



Fig.2.11 Work Clothes

(Source-https://s-media-cache-ak0.pinimg.com/564x/09/86/43/098643b650588ba63874470ece730c9a.jpg)

- **Casual Wear** for men includes denims, casual trousers, cargo with polo T-shirt and routine yet stylish wear.



Fig.2.12 Casual Wear

(Source-thebestfashionblog.com/wp-content/uploads/2012/11/French-Connection-Spring-Summer-2013-1.jpg)

Children Wear

The children wear business is very complicated because each size range is a separate market. It is very difficult to categorize children's wear. Categories change with each size and price range. Also, boundaries between categories are becoming increasingly blurred.

- **Girls** Dresses are available in all style and price range. Holidays and spring are the biggest seasons for special occasion dresses. Some girl's dresses like jumpers, jackets, and skirts are considered tailored clothing. Some other garments for girls include frocks, capes, Capri, gowns, trouser and tops.



Fig.2.13 Girl Dress
(Source- https://babyouts.com/wp-content/uploads/2016/02/little-girl-outfits-05.jpg)

- **Boys** Traditional clothing includes blazers, jackets, suits, pants and shorts.
- **Children Sportswear** comprises T-shirts, jeans, pants, shorts, overalls, jumpsuit, leggings, sweat shirts in knits and woven particularly denim and fleece.
- **Children Outerwear** includes dress coat, all-weather coats, raincoats, ski-jackets, wind breakers, snow suits, waist coats, jackets, etc.
- **Children Sleepwear** includes pyjamas, nightgowns, nightshirts and robes.



Fig.2.14
(Source-https://s-media-cache-ak0.pinimg.com/originals/00/98/bc/0098bc50496c4dd889101d1914e61f90.jpg)

Exercise

Assignments
1. Collect 5 pictures of dresses and gowns for women and paste it in the file.
2. Collect 5 pictures of sports wear and suit for men and paste it in the file.

Assessment

Differentiate between the following:
1. Swimmer and Social Apparel for women.
2. Tailored clothing and Sport wear for men.

Multiple Choice Questions

Tick the most appropriate answer from the choices given below:

1. People buy garments ---------------- .
   a) To look attractive
   b) To look fashionable
   c) To protect body
   d) All the above
2. Bridal gowns are -----------
   a) Two piece garment
   b) Floor length garment
   c) Swim suit
   d) None of the above
3. All weather coat, raincoat, ski jackets are ---------------.
   a) Sleep wear.
   b) Sport wear.
   c) Outer wear.
   d) None of the above.

State whether the statement is true or false.

a) Work clothes required by laborers are overalls, loose work shirts and pants.
b) Sportswear comprises of suits, tuxedos, over coats, topcoats and separate trousers for business and evening wear.

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A

a) Explained different categories of garments for women.
b) Explained different categories of garments for men.
c) Explained different categories of garments for children.

Part B

Discussed in class the following:

(a) Categories of women wear
(b) Categories of men wear
(c) Categories of children wear

Part C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	Yes	No
Identify different categories for women's wear		
Identify different categories for men's wear		
Identify different categories for children's wear		

Session 2: Introduction to Colour, Colour Wheel and Colour Harmonies

Relevant Knowledge

Colour is the perceptual characteristic of light described by a colour name. Specifically, colour is light and light is composed by many colours. Objects absorb certain wavelengths and reflect others back to the viewer. We perceive these wavelengths as colour. Colour and colour harmonies form the foundation of art as well as design. Colour is the most important aspect of clothing. Response to colour is immediate, inescapable and lasting. One may forget the design detail, but are likely to remember the colour.

Colour is an element of art and design that is produced when light, striking an object, is reflected back to the eye. There are some properties or dimensions of colour:

1. Hue: A hue refers to a *pure* colour, one without tint or shade. A hue is an element of the colour wheel.

2. Saturation: The degree of purity of a hue which refers to as intensity i.e the brightness or dullness of a hue.

3. Value: A measure of the amount of light reflected from a hue.

- **a. Tint**: A colour produced by addition of white.
- **b. Shade**: A colour produced by addition of black.
- **c. Tone**: A colour produced by addition of grey.

THE COLOR WHEEL

A colour circle, based on red, yellow and blue, is traditional in the field of art. Sir Isaac Newton developed the first circular diagram of colours in 1666. Since then, scientists and artists have studied and designed numerous variations of this concept. Differences of opinion about the validity of one format over another continue to provoke debate. In reality, any colour circle or colour wheel which presents a logically arranged sequence of pure hues has merit.



Fig.2.15 Colour Wheel

(Source-http://hotshotthemes.com/wp-content/uploads/2016/06/complementary-colours-to-gray-simple-decoration-3-on-home-gallery-design-ideas.jpg)

Formation of Colour Wheel

Color wheels are based on three primary colours, three secondary colours, and the six intermediates formed by mixing a primary with a secondary, known as tertiary colours, for a total of 12 main divisions.

There are also definitions (or categories) of colours based on the colour wheel. We begin with a 3-part colour wheel.

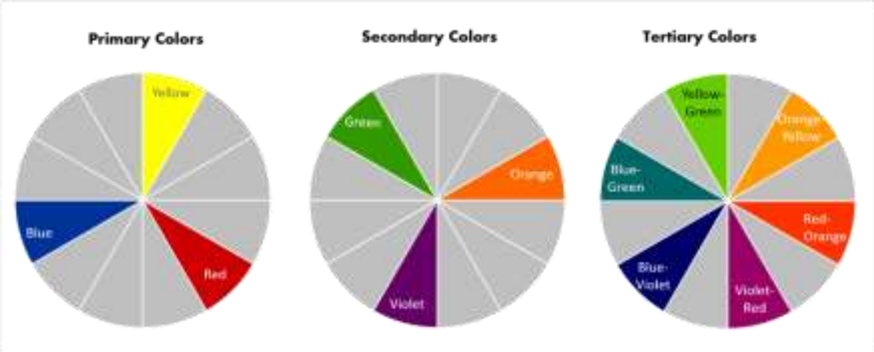


Fig.2.16 Primary, Secondary, Tertiary

(Source- http://www.slideteam.net/wp/wp-content/uploads/2015/09/Primary-Secondary-Tertiary-Colors.png)

Primary Colours: Red, yellow and blue are primary colours. In traditional Parang colour theory (used in paint and pigments), primary colours are the 3 pigment colours that cannot be mixed or formed by any combination of other colours. All other colours are derived from these 3 hues.

Secondary Colours: Green, orange and purple are secondary colours. These are the colours formed by mixing two primary colours in equal proportions.

Tertiary Colors: Yellow-orange, red-orange, red-purple, blue-purple, blue-green & yellow-green are tertiary colours. These are the colours formed by mixing an adjacent primary and a secondary colour in equal proportions.

COLOUR HARMONIES

Color Harmonies are also called as Color Schemes. Harmony can be defined as a pleasing arrangement of parts, whether it be music, poetry, colour, or even an ice cream sundae.

In visual experiences, harmony is something that is pleasing to the eye. It engages the viewer and it creates an inner sense of order, a balance in the visual experience. When something is not harmonious, it's either boring or chaotic. The human brain rejects what it cannot organize or what it cannot understand. The visual task requires that we present a logical structure. Colour harmony delivers visual interest and a sense of order.

Classification of Color Harmonies

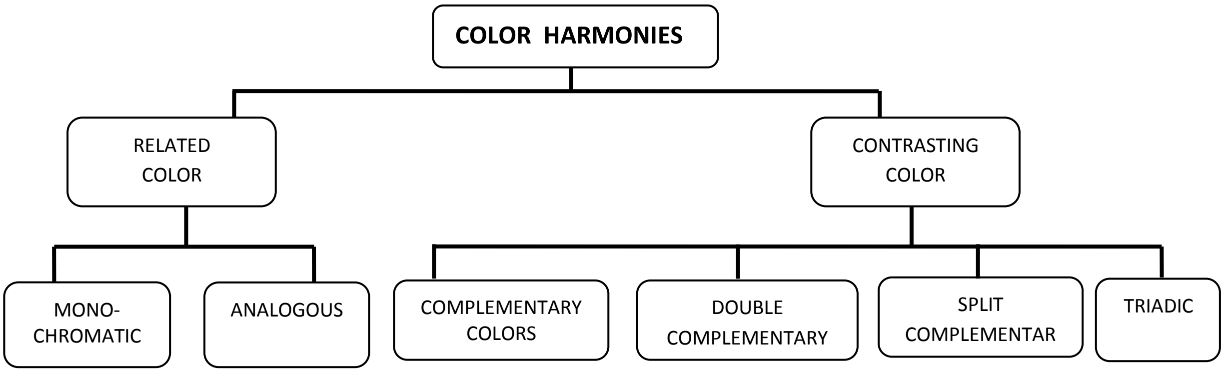


Fig.2.17 Color Harmonies

I. Related Colour

Related colour harmonies have one hue in common.There are various related colour harmonies.

(i) Monochromatic colour: Monochromatic colours are all the colours (tints, tones, and shades) of a single hue. Monochromatic colour schemes are derived from a single base hue and extended using its shades, tones and tints. Tints are achieved by adding white and shades and tones are achieved by adding a darker colour, black or gray.

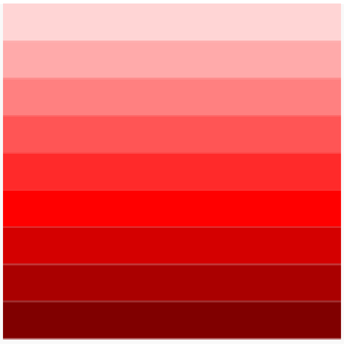


Fig.2.18 Monochromatic colour scheme

(Source: https://en.wikipedia.org/wiki/File:CPT-Websites-monochrome.svg)

(ii) Analogous colour: Analogous colours are groups of three colours that are next to each other on the colour wheel, with one being the dominant colour, which tends to be a primary or secondary colour, and one on either side of the colour. Blue, Blue-Green and Blue-violet are examples.

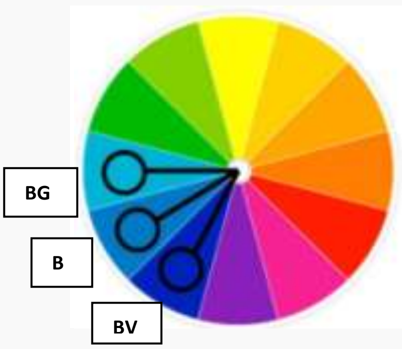


Fig.2.19 Analogous colour

(Source-http://img.jsgtlr.com/2016/09/13/what-are-analogous-colours-l-ec25498f01d1c92e.jpg)

II. Contrasting Color

Contrasting colour Harmonies have no hue in common.

(i) Complementary colour: Colors that are opposite to each other on the colour wheel are considered to be complementary colours (example: red and green).



Fig.2.20 Complementary Color

(Source- https://images.sampletemplates.com/wp-content/uploads/2015/06/Color-Wheel-Complementary-Colors.jpg)

(ii) Double complementary: Two adjacent Colors and its opposite colour on the colour wheel are considered to be double complementary colours (example: red and green, Red-Orange and Blue-Green)

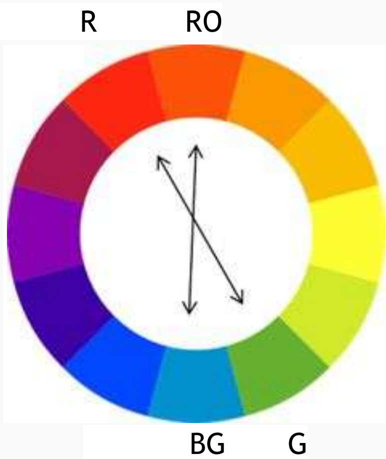


Fig.2.21 Double Complementary Color

(Source- https://s-media-cache-ak0.pinimg.com/236x/83/7b/e4/837be47fd97d1931a214e6b21fee5222.jpg)

(iii) Split-Complementary: The split-complementary colour scheme is a variation of the complementary colour scheme. In this harmony one colour and two adjacent of its compliment colour are taken. Example: red, blue green and yellow green



Fig.2.22 Split Complementary Colors
(Source-https://s-media-cache-ak0.pinimg.com/originals/f8/ae/bb/f8aebb23720045e628bd9b16ddda92a9.png)

(iv) Triadic: A triadic colour scheme uses three colours that are evenly spaced around the colour wheel

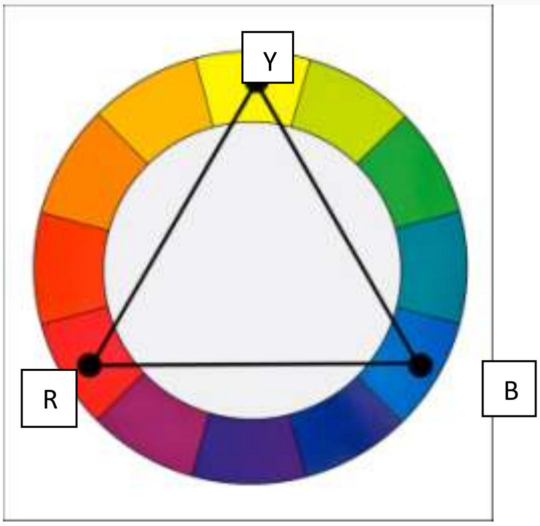


Fig.2.23 Triadic Colors
(Source-https://luminous-landscape.com/wp-content/uploads/2012/10/Triadic.jpg)

Achromatic colour scheme: Achromatic means absence of colour. This scheme has white and black at the two extremes with tones of grey in between.

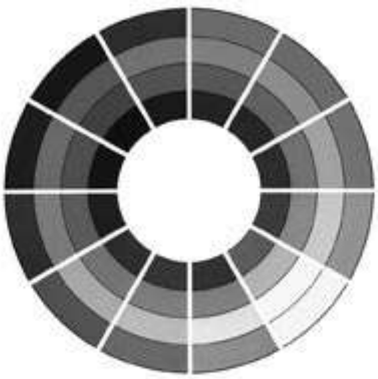


Fig.2.24 Achromatic Color Scheme
(Source-http://www.bigbeadlittlebead.com/guides_and_information/Colour_Theory/19_BBLB_Achromatic_Greyscale_Scheme.jpg)

Exercise

Assignments

1. Collect 5 pictures of objects from your surroundings of primary, secondary and tertiary colours and paste it in the file.
2. Draw the colour wheel.
3. Draw a shape and colour using primary, secondary and tertiary colour.

Assessment

Explain the following:

1. Achromatic colours
2. Hue
3. Complementary colours
4. Analogous colours

State an example for each of the following colour schemes:

1. Achromatic colours
2. Complementary colours
3. Analogous colours
4. Split complementary colours.

Write short notes on:

1. Monochromatic colour scheme.
2. Achromatic colour scheme.
3. Complementary colour scheme.

Explain in detail:

1. Related colour harmonies
2. Contrasting colour harmonies

Multiple Choice Questions

Tick the most appropriate answer from the choices given below:

1. ---------------- are opposite colour on the colour wheel
   a) Analogous
   b) Complementary
   c) Monochromatic
2. Purest form of colour is called as--------------
   1. Hue
   2. Value
   3. Intensity
3. By mixing two primary colours we get-----------
   a) Secondary colours
   b) Monochromatic colours
   c) Tertiary colours

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A

d) Explained primary, secondary and tertiary colours.
e) Explained colour harmonies.

Part B

Discussed in class the following:

a) Hue, value, intensity of colour
b) Primary, secondary and tertiary colours
c) Related and contrasting colour schemes

Part C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	Yes	No
Identify pictures of primary colours		
Identify pictures of secondary colours		
Identify pictures of tertiary colours		
Identify related and contrasting colour harmonies		

Session 3 : Factors Affecting Colour Choice

Relevant Knowledge

Colour is said to be dynamic as it not only appeals to the intellect but influences our emotions. Some old expression like “seeing red” and “feeling blue” are indications of definite attitudes toward colours. Certain HUES are connected with the various seasons of the year, holidays, national and religious symbolism, etc.

A fundamental property of colour from the point of psychology is its warmth and coolness. The colours at the warm end of the spectrum accelerate pulse, temperature and appetite. Those persons who prefer warm colours are extroverts accept new ideas readily, adjust with others and think quickly. Those who prefer cool colours are introverts, detached, reserved with others, adjust slowly and express themselves with difficulty.
Therefore, in general red-orange-yellow ranges of warm colours are instant, forceful, advancing, restless, stimulating, radiating warmth and vitality and helping to create illusions of increased size. In contrast the green-blue-violet range of cool colours is receding aloof, tranquil, passive, and creating a sense of distance and smaller size. The power of colour to express personal temperament, convey feelings and create illusions is a valuable tool in assembling costume to make the most of individual beauty.

The colours we choose to surround ourselves affect us more than we think. As a society, we associate colours with so many different things - they have meanings beyond simple visual stimulation. Some studies even suggest that we *feel* colours more than we see them. Following are some of the factors that affect our colour choice:

1. Age and Sex

The colour of the dress should depend on the age and sex of the wearer. Mostly, bright and dark colours suit to children and youngsters whereas dull colours have a depressing effect. Sober and light colours suit to elderly persons.



Fig.2.25 Bright and sober blue
(Source-https://ae01.alicdn.com/kf/HTB1leG2LVXXXXabXVXXq6xXFXXXD/Royal-Blue-short-prom-dresses-2016-Grace-Karin-strapless-party-dress-white-black-font-b-yellow.jpg)
(Source-https://s-media-cache-ak0.pinimg.com/564x/62/37/97/6237973192ba15f10f0ec547999d3e00.jpg)

It’s a notion that men prefer tints and shades of blue and women prefer tints and shades of pink. But beyond this pink and blue, now a days it is more a matter of personal preference. Color has no sex constraints now. However, usually males like blue, black, grey, earthy tones and certain shades like red, green and females are more inclined to warm, soft and bright colours like peach, pink, etc. Selection of colour also depends on many factors like fashion, changing colour trends, availability or need in wardrobe, likes and dislikes of a person and availability.



Fig.2.26 Color preferences for boys and girls
(Source-http://i1.wp.com/www.discountdevi.com/wp-content/uploads/2016/01/Mens-Womens-Wear.jpg?resize=300%2C300)

2. Season and Time

Season has a great effect on colour of the dress. In summer, light and cool colours and in winter, dark and warm colours are preferred. Cool colours like green, blue, pink, white, light purple give a feeling of coolness, while warm colours like red, orange, and yellow that of warmth.

Likewise, dark and bright colours do not appeal in daytime, while at night these colours add to the beauty of the wearer. Very warm, bright glossy colours used in summer or during day make the wearer and onlooker uncomfortable.



Fig.2.27 Winter wedding gowns
(Source-https://lh3.googleusercontent.com/MWkDe9i7LQdywsT4tHa3xXUn3JT9bmJbzNjzP01pXO_ smTGsYJ8ET_ V85vmwyChBbQ=h900)



Fig.2.28 Summer wedding gowns
(Source-https://s-media-cache-ak0.pinimg.com/236x/0d/b7/80/0db780cb8c25503d646e08b73de6f15b.jpg)

3. Size and Shape of the Body

Colours create illusion in the size and shape easily. Warm colours play an important role in increasing the size and cool colours in reducing the size. Fatty people with disproportionate body should not wear warm colours, as these colours increase the body size and enhance the body line. On the other hand, a slender person should use dark and bright colours to give a healthy look.

4. Colour of skin, hair, and eyes

Colour of skin is very important in the choice of the colour of dress. Dark colours look better on wheatish complexion, cool and sober colours on fair complexion. For example, blue, pink, light purple colours suit more to people with fair complexion. Yellow and brown colours suit more to blonds (people with brown eyes and hair).





Fig.2.29 Dark colours on whitish complexion, Cool colours on fair complexion
(Source-http://www.bethediva.in/wp-content/uploads/2014/09/22.jpg)
(Source-https://s-media-cache-ak0.pinimg.com/564x/d9/d2/2f/d9d22fca09d032553a460fd3f203545b.jpg)

5. Occasion

The colour of the dress should be appropriate to the occasion. Dark and light colours should be worn in parties, marriages and festivals, etc. to have cheerfulness as per the occasion.

On serious occasions, one should wear such colours that give a look of seriousness. On special occasions and in certain professions, some particular colours are used, for example, black or white colours are used in mourning.

Doctors, nurses, advocates, postmen, etc. have a distinctive uniform. Use of gaudy colours is not desirable in schools, colleges and offices. Formal social occasions demand a use of light, dull and medium colours in dressing.



Fig.2.30 Doctor and Advocate Uniform
(Source-https://thumbs.dreamstime.com/z/male-medical-doctor-uniform-holding-clipboard-posing-hospital-corridor-30307085.jpg)
(Source-http://3.imimg.com/data3/IE/YN/MY-10090897/advocate-gowns-jackets-coats-500x500.jpg)

6. Fashion

Colours of dress keep on changing with the change in fashion. A particular colour in fashion should only be worn if it suits the personality, colour, and figure. All colours suit only few people. Intensity and value of the colour in fashion can be changed according to the suitability of the wearer.

7. Personality

Colour of the dress reflects the personality of the wearer. Colour is an index of individual's interest. Selection of colours should aim at enhancing the personality of the wearer. Some people like gaudy and bright colours, while some others dull and sober. Colours express varied moods. Warm colours like yellow and red are indication of cheerfulness and enthusiasm and also stimulating. These colours go well with extroverts.

Exercise

Assignments

1. Collect 5 pictures of different shades of yellow colour garments worn in summer season and paste it in the file.
2. Collect 5 pictures of garments worn by professionals.

Assessment

Explain how age, personality and occasion affect the colour choice?

State True or False:

1. With the uniform one can identify the profession of a person.
2. The selection of colour is done as per age, occasion and weather.
3. Selection of colour also reflects ones personal character.

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A

Explained the factors affecting the choice of colour?

Part B

Discussed with examples various factors affecting the choice of colour?

Part C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	Yes	No
State the factors affecting the choice of colour.		
Identify dresses and colours for different factors affecting choice of colours.		

Session 4: Silhouettes and Shapes

Relevant Knowledge

Silhouette refers to the contour or outline of an object, person or animal. In fashion, the term "silhouette" refers to the outline of a garment, or the garment's overall shape. Usually, silhouette is what one sees from a distance. It is responsible for the first impression of the garment. It is also referred to as "Shape" or "Form". The silhouette is the starting point for most of the flat sketches. The designer evaluates a fabric and imagines how it will cover the body, and selects a silhouette which is compatible with the fabric. Silhouette of the garment should be related to the body structure.

Some variations/types of silhouette of garment are:

1) A-Line: This is a silhouette, usually of a one-piece garment, flaring gently at the waist or hips, thus resembling the letter A.



Fig.2.32 A-Line
(Source: http://www.capitalfm.co.ke/lifestyle/files/2012/05/A-LINE-SILHOUETTE.jpg)

2) Empire: This was a popular silhouette in the early 1800s; the cut features a waistline just below the bust and a skirt that flows down all the way down.



Fig.2.33 Empire line
(Source: http://www.capitalfm.co.ke/lifestyle/files/2012/05/EMPIRE-GOWN.jpg)

3) Mermaid: This is a voluptuous silhouette that follows the figure down to the knee before flaring out dramatically. It is mainly for the petite figures with less junk in the trunk and no tummy bulge.



Fig.2.34-Mermaid

(Source: http://www.capitalfm.co.ke/lifestyle/files/2012/05/mermaid-silhouette.jpg)

4) H-Line: This is a silhouette, usually of a one-piece garment, going straight from shoulder to hip, and crossed at the waist with a belt, cuff or other accent, thus resembling the letter 'H.'
5) Basque waist: This silhouette is defined by its natural waistline that angles down into a V and accompanies a flared skirt.
6) Princess: This silhouette is quite similar to the A-line, It is fitted at top and follows clean lines as it flares out through the skirt.
7) Sheath: This silhouette flows straight down from the neckline, thus gently hugging YOUR form.
8) Ball gown mostly favored among the royalty as it was made popular by Queen Victoria, who wore a ball gown silhouette for her wedding. It has a fitted bodice and voluminous skirt often made of tulle fabric.
9) Ballerina: This silhouette is inspired by classical ballet and it flows straight down from the neckline, and features a voluminous skirt that falls to the mid-calf.





Fig.2.35 H Line, Basque waist, Princess, Sheath, Ballerina, Ball Gown
(Source: http://www.capitalfm.co.ke/lifestyle/files/2012/05/mix.jpg)

FACTORS EFFECTING SILHOUETTE

1. **The figure:** A good silhouette always relates to body structure and emphasizes the points of body articulation. It emphasizes the good points and hides imperfections. For example, two women wearing exactly the same dress make quite a different impression because of their height and body structure.
2. **Carriage:** Carriage or the way a person carries herself enhances or ruins the silhouette. A beautifully proportional figure and well planned garment can be ruined by a slouchy, dejected carriage. On the other hand an erect carriage works miracle in counteracting figure irregularities. Everyone is not endowed with perfect figure but one can make the most of her figure by carrying herself with grace.
3. **Suitability:** The silhouette of a garment should be selected considering its suitability for the purpose. Whether it is; for a business or formal occasion, for shopping or travelling purpose, or for party or evening wear. Purpose places limitations on garment silhouettes in any fashion period. Defiance of these limitations, overdressing or under dressing indicates inexperience, poor judgment and lack of good taste.
4. **Fashion:** Fashion is the most decisive factor in affecting the silhouette of the garment in specific period of time. From the garment silhouette only one can recognize the fashion periods. The study of silhouette and omission of details strengthen each period impression and make them more lasting.
5. **Texture:** The silhouette of the garment is also affected by the fabric used in its construction owing to the drape and feel of the fabric. Also all the fabrics are not suitable for a specific silhouette due to the same reasons as above. It is very important to use a suitable fabric in specific styles so the appropriate silhouette can be achieved along with the desirable psychological effects.
6. **Garment fit and construction:** The silhouette of the garment is also affected by the fit desired in the garment which is dependent on the ease, balance and grain of the fabric used in the garment. Also the type of construction techniques and the construction features required and their suitability for the fabric used in construction affects the final silhouette of the garment. For example; the bias effect is achieved by using asymmetric drape. The best example is the sari.

WOMEN'S BODY SHAPES

There are different types of body shapes. To be able to dress fashionably as a woman you should try to know your body shape, so that you don't dress for another body figure type. Are you pear /triangle shaped, inverted triangle, hourglass or rectangle.

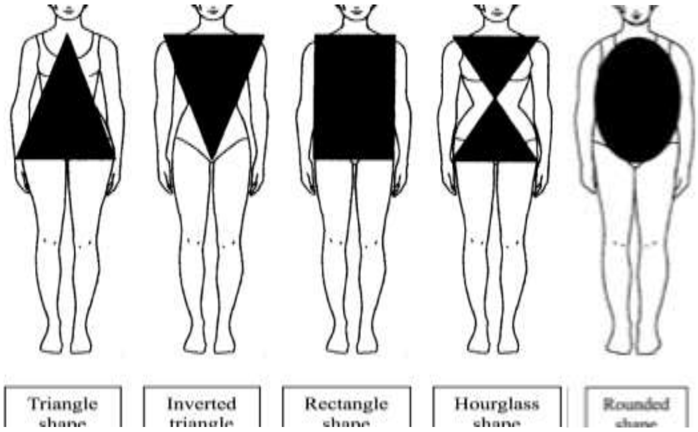


Fig.2.31 Basic Body Shapes
(Source: http://www.beliteweight.com/blog/wp-content/uploads/2013/10/How-to-Dress-for-Your-Body-Shape-7-Tips.jpg)

BASIC BODY SHAPES

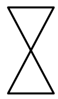
Triangle /Pear body figure: A female with this shape has a round, heavy bottom with a defined waist but hip size are always wider than the bust and shoulders. △ Short legs with full thigh are common characteristics. Triangular shaped woman main style aim is to balance her top half to bottom half by creating the appearance of a wider upper body.
Do wear: Accessories and designs to draw attention to your upper body, Short-sleeved tops, Shoulder pads to broaden your shoulder, medium to high necklines, garments to emphasize your waist, skirts and dresses that are straight or slightly flared, Low rise pants to avoid gaping at the waist, boot leg and straight pants .
Don't wear: Avoid baggy garments and garments that add bulk to your hips. Hems or design lines at hip-line will only add more size to your hips .Pleats skirts or pants are wrong choice of clothes

Inverted triangle body figure: A woman with this shape has a broader shoulders, large bust, narrow hips, slim legs, flat bottom. Fat is mainly distributed in the abdomen, chest and face. ▽
Do wear: Baggy pants, Pegged pants to be worn to give a balanced overall look. Bell silhouette should be worn.
Don’t wear: Avoid wearing deep necklines, off shoulders because it will add more emphasis to broad shoulders. Avoid skinny pants and tubular silhouette.

Rectangle Figure: Rectangular body type is also known as straight figure. The bust and hip are approximately of the same width. The waist measures 1” to 8” smaller than the bust. The Rectangular body figure shape usually depends on the ribcage structure.

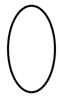
Do wear: Garments that add bulk at the hip like lots of layered clothes, various prints, textures and details like ruffles, tiers, studs around the neck are preferable. Lots of accessories and bright and eye catching colours, sweaters and jackets are helpful in creating a better view. Thick and heavy belts are suggested.
Don't wear: Avoid tubular silhouettes and no details in upper garments. Stretchable fabrics are not good for the rectangular body as it put lot of emphasis on the body shape.

Hourglass Figure: is a curvy female with the hips and bust of the same width which emphasizes a defined waist. Body shape is the best example of hourglass. The main style aims is to emphasize on curves, especially the waist, without adding bulk.



Do wear: Fitted and semi-fitted clothes, soft, clingy, flowing fabrics, low to medium-low necklines, dresses with defined waistlines, straight and gently flared pants, straight and gently flared shirts, accessories your waist with belt to flatter your figure.
Don't wear: Bulky, fabrics, baggy styles because they will hide your figure.

Rounded /Oval figure has an overall appearance of being round especially around the waist region, stomach are large, the hips are wide and upper thighs are full. The bottom could be full or flat.



Do wear: Rounded/oval shaped main style aims is to draw attention upwards towards your shoulders and face. Do wear sarongs, necklaces and other focal points designed to draw an observer's eyes up towards your shoulders and face. Semi-fitted and loose fitting clothing's, very fitted bras and support under wear to minimise your stomach. Tops and bottoms in the same colours are better mom, low necklines, un-tucked tops that does not emphasize the rounded stomach. Tops and dresses that flow through the waistline. Straight pants in soft, flowing fabric are good choice
Don't wear: Clingy fabrics, tight fitted clothes, fabric with large patterns, high necklines, Tucked-in tops, pleated skirts because they add more volume to your figure.

VARIOUS TYPES OF FIGURE ABNORMALITIES

If a figure is having the measurements that are not related to its height and also measures are not related with each other in a proportional order, then it is noted as disproportionate figure. The figure is not a balanced one and imbalanced in appearance. Even though some persons are having normal body measurements, but due to the variation of some parts, they are having figure defects. Some of the types of abnormal figures are:

1. **Erect figure**: Those who always walk in an erect pose. For such figures, front length measurements for upper garments are taken more depending on the erectness and even shoulder slant should be carefully studied.
2. **Stooping figure**: Those who walk in a bent posture. For these figures, the length of back part of an upper garment is taken more plus the shoulder bent and shape should also be considered properly.
3. **Corpulent figure**: A figure with access fat around the waist is called corpulent. For such figures, waist measurement is more than chest. The hip and waist measurements are almost the same.

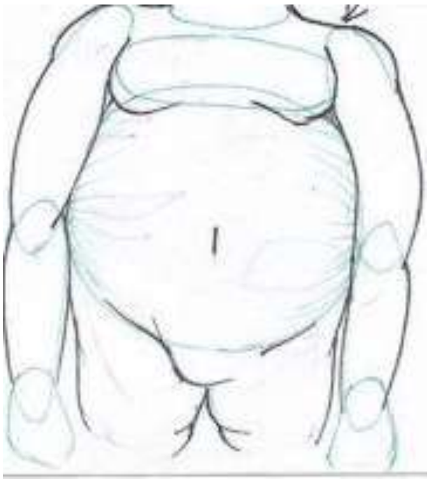


Fig. 2.36 Corpulent figure
(Source: https://www.google.co.in/search?q=disproportionate+body+shape&biw=1280&bih=694&source=lnms&tbm=isch&sa=X&ved=0ahUKEwjMkaeQnvTQAhUFOY8KHfXLA6QQ_AUIBigB#tbm=isch&q=sketches+of+corpulant+figures)

4. **Square Shoulders**: Straight shoulder shapes with minimum slope. In such an abnormality, minimum shoulder slant is given while drafting and cutting the garment.

5. **Sloping/Down shoulders**: Excess shoulder slant is visible in such figures. Care must be taken while giving the shoulder slope in the drafts of upper garments like tops, blouse, etc.

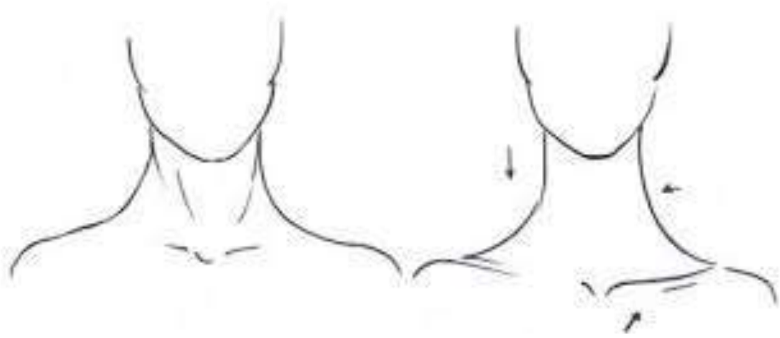


Fig 2.37 Square and Sloping Shoulders
(Source: https://www.google.co.in/search?q=disproportionate+body+shape&biw=1280&bih=694&source=lnms&tbm=isch&sa=X&ved=0ahUKEwjMkaeQnvTQAhUFOY8KHfXLA6QQ_AUIBigB#tbm=isch&q=sketches+of+corpulant+figures)

6. **Short and stout**: Height is less than normal figure, and weight is more. Vertical lines and linear pattern and dark colours help to create an illusion of length in such figure types. Care must be taken while measurement taking as well as while fabric print selection.

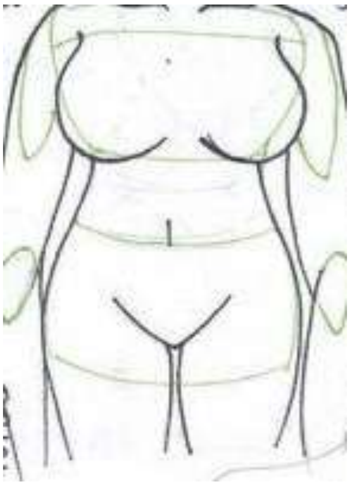


Fig.2.38 Short and stout figure
(Source: https://www.google.co.in/search?q=disproportionate+body+shape&biw=1280&bih=694&source=lnms&tbm=isch&sa=X&ved=0ahUKEwjMkaeQnvTQAhUFOY8KHfXLA6QQ_AUIBigB#tbm=isch&q=sketches+of+corpulant+figures)

7. **Tall and Thin:** More height but skinny and thin body gives such figures a very sleek and slim look. Use of Bulky textures with a lot of volume, big bold prints, horizontal lines and light colours all help in minimizing the body abnormality.

8. **Prominent Bust**: Chest measurement is more in such postures. The center front chest measures are more than the center back chest area. Upper garments shoulder be made after taking proper and accurate measurement.



Fig. 2.39 ***Prominent Bust and Hip***
(Source: https://www.google.co.in/search?q=disproportionate+body+shape&biw=1280&bih=694&source=lnms&tbm=isch&sa=X&ved=0ahUKEwjMkaeQnvTQAhUFOY8KHfXLA6QQ_AUIBigB#tbm=isch&q=sketches+of+corpulant+figures)

9. **Flat Bust**: In this body type, the chest area is flat and not very prominent, so chest measurements should be taken properly before construction of the upper garment.

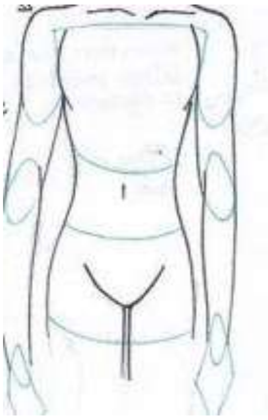


Fig.2.40 Flat bust And Flat hip
(Source: https://www.google.co.in/search?q=disproportionate+body+shape&biw=1280&bih=694&source=lnms&tbm=isch&sa=X&ved=0ahUKEwjMkaeQnvTQAhUFOY8KHfXLA6QQ_AUIBigB#tbm=isch&q=sketches+of+corpulant+figures)

10. **Hump back**: In this type of figure, Back is bulged out a lot, so back chest measurement is more than front.



Fig.2.41 Hump Back
(Source: https://www.google.co.in/search?q=sketches+of+hump+back+body+abnormality)

11. **Pigeon Chest:** In these figures, chest measurements are less at front than at back. So care must be taken while cutting the upper garment.



Fig.2.42 Pigeon Chest
(Source: http://pigeonchestproblems.com/wp-content/uploads/2015/07/pigeon-chest-4.jpg)

12. **Bow legs and Knocking Knees:** Some persons are having knees bend on the outer side than the normal, such figure is called Bowleg. The figures having knees moving inner side than the normal is known as Knocking Knees. In such leg abnormalities, care should be taken while taking measurements and garment construction of lower garments, like pants, trousers. Also for females, the legs can be covered by usage of long flared skirts or full gowns.



Fig.2.43 Bow Legs and Knocked Knees

(Source: http://image.shutterstock.com/z/stock-vector-bandy-legs-shape-of-the-legs-genu-varum-genu-valgum-a-physical-legs-deformity-bowing-of-the-389876083.jpg)

It is important for a garment designer to analyze the figure types before designing, drafting and cutting the garment for such abnormalities and apply modifications in dimensions and curves in drafting for achieving good quality garment without any fitting problem. Designers should have this skill to hide the defected areas and highlight or emphasize the good aspects in a body with the usage of constructional and decorational techniques in the garments.

Exercise

Activity

Collect pictures of different types of garment silhouettes and make two collage as per party/ evening wear and casual wear and paste them in the file.

Explain the following:

1. What is silhouette?
2. State the different types of garment silhouette?
3. What are the factors effecting silhouette?
4. Explain any four figure abnormalities with the help of diagram. Also define what points should be kept in mind while making garments for such figures.

Write a brief note on the following Silhouettes:

1. A-Line
2. Mermaid
3. Empire line
4. H-Line

5. Basque waist
6. Princess
7. Sheath.
8. Ball gown
9. Ballerina

Assessment

Fill in the blanks.

1. Mermaid garment silhouette suits ___________ figure.
2. Oval or round body shape people should not wear ____________ clothes.
3. There are ____________ types of basic body shape.
4. Triangle body shape is also called as _____________ body shape.
5. __________ is the shape where hip and bust has same width.
6. The figure in which the waist measurement is more than chest is known as ________ figure.
7. The shoulder slant is taken more than normal while drafting for __________ figure abnormality.

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A

a) Explained various type of human body shapes.
b) Explained various type of garment silhouette.
c) Explained factors effecting silhouette.
d) Explain different types of abnormal figures.
e) Explain the difference between square shoulders and sloping shoulders with the help of diagram.

Part B

Discussed in class the following:

a) Preference of clothing for a particular style of body shape.
b) Importance of right selection of garment for a particular body shape.
c) Different figure abnormalities and the points to be kept in mind while constructing garments for such figures.

Part C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	Yes	No
Identification of various types of human body shape.		
Identification of different types of garment silhouette.		
State the factors affecting Silhoettes.		
Identifies different figure abnormalities.		

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Apparel, Made-ups and Home Furnishing

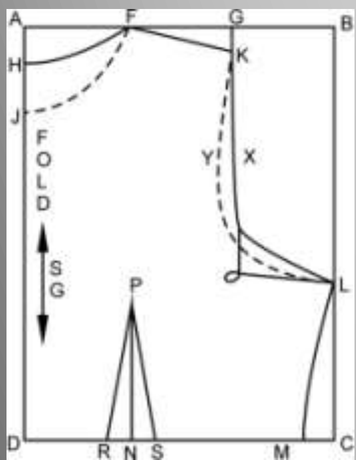
NSQF Level 2 – Class X

HSA 203-NQ2014 : ELEMENTARY DRAFTING AND PATTERN MAKING

Student's Workbook







विद्ययाऽमृतमश्नुते

एन सी ई आर टी
NCERT

पं.सुं.श.केन्द्रीय व्यावसायिक शिक्षा संस्थान, श्यामला हिल्स, भोपाल

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Introduction

Pattern making is an art. It is the art of manipulating and shaping a flat piece of fabric to conform to one or more curves of the human figure. Pattern making is a bridge function between design and production. A sketch can be turned into a garment via pattern which interprets the design in the form of the garment components.

Pattern drafting is an important technique when designing an outfit. Before patterns are traced onto fabric, a similar sketch is prepared on paper and this process is called pattern drafting. It generally requires a lot of focus and expertise. Drafting is typically combined with pattern making thus gives an idea to the designers of how the final look will turn out. Drafting and pattern making has generally become a common step in fashion design. The first step is to create a sketch using the body measurements. After that, the entire garment is typically broken down into several sections and so it becomes easy to draft the design according to the requirements.

This unit provides basic information about drafting and pattern making which refine the pattern making skills.

Session 1: Importance and Method of Taking Body Measurements

Relevant Knowledge

The development of a garment comprises of different processes. An important part of the pre-sewing process is taking accurate measurements to ensure to get the correct fit. Fit is the most important factor leading to the final acceptance or rejection of a garment. The key for correct garment fitting is the adequate and precise measuring of a body. This session, deals with the importance and method of taking body measurements.

BODY MEASUREMENTS

Accurate body measurements are of vital importance for obtaining best results in garment construction. Besides good fitting, correct measurements also contribute towards saving time in constructing garments. Personal measurements are required not only for stitching the garments at home or getting it stitched, but also for buying ready-made garments.

Taking body measurements is a responsible task which should be undertaken with great care. For this purpose, it is important for a dress maker to have adequate knowledge about correct methods of taking and recording body measurements, equipment required for it and other important points to be considered in taking the measurements.

IMPORTANCE OF BODY MEASUREMENTS

In order to construct garments that fit well, body measurements must be taken with precision. One can draft original patterns based on the measurements which can be used as the basis for a variety of styles. One may buy commercial (readymade) patterns, but to select the pattern of correct size and later to make pattern adjustments to fit the figure one should know his/her own body measurements.

PREPARATION FOR MEASURING

For taking the measurements, a good quality measuring tape should be used, which is sturdy and will not stretch. The metal end of the tape should be used for vertical measurements and the other end for horizontal and circumference measurements. The measurements should be taken over a smooth fitting foundation garment and never over bulky garments. Before taking measurements, a cord or string should be tied around the waist. A ¼" wide tape is taken and casted around the armhole. This will make it easier to measure width of shoulders, arm scye depth etc. One should stand erect with the arms hanging straight at the sides while measurements are being taken by someone else. Snug measurements should be taken rather tight or loose ones. Hold the tape parallel to the floor for horizontal measurements, and perpendicular to the floor for vertical measurements. As the measurements are taken, they should be recorded in a note book.

Measurements Needed for the Construction of Children's Garments

The measurements needed for the construction of children's garments are given below in Table.3.1.

Table 3.1: Measurements for Construction of Children's Garments

S.NO	MEASUREMENTS NEEDED
1	Chest
2	Waist
3	Hip
4	Neck
5	Back width
6	Back waist length
7	Front waist length
8	Armscye depth
9	Short sleeve length
10	Lower arm
11	Full sleeve length
12	Sleeve Circumference
13	Wrist
14	Waist to hip
15	Waist to ankle
16	Thigh girth
17	Knee round
18	Calf round
19	Ankle round
20	Cervical height
21	Frock length
22	Shirt length
23	Pant length
24	Crotch length
25	Inseam

Measurements Needed for the Construction of Men's Garments

The measurements needed for the construction of men's garments are given below in Table.3.2

Table 3.2: Measurementsfor Construction of Men's Garments

S.NO	MEASUREMENTS NEEDED
1	Chest
2	Waist
3	Hip (Seat)
4	Neck
5	Back width
6	Back waist length
7	Short sleeve length

8	Full sleeve length
9	Cuff
10	Shirt length
11	Pant length
12	Half pant length
13	Crotch length
14	Inseam

Measurements Needed for the Construction of Ladies Garments

The measurements needed for the construction of ladies garments are given in Table.3.3.

Table 3.3: Measurements for Construction of Ladies Garments

S.NO	MEASUREMENTS NEEDED
1	Bust (circumference)
2	Waist (circumference)
3	Hip (circumference)
4	Back width /across back
5	Neck
6	Shoulder
7	Armscye depth
8	Upper arm circumference
9	Lower arm circumference
10	Elbow circumference
11	Knee circumference
12	Wrist
13	Back waist length
14	Front waist length
16	Shoulder to bust
17	Distance between bust points
18	Full sleeve length
19	Short sleeve length
20	Waist to hip
21	Waist to ankle
22	Thigh round
23	Knee round
24	Calf round
25	Ankle round
26	Inseam
27	Leg Length
28	Skirt length
29	Bodyrise

METHOD AND SEQUENCE OF TAKING BODY MEASUREMENTS

Ladies and Girls Measurements

The various positions on the body where measurements are to be taken are described below.

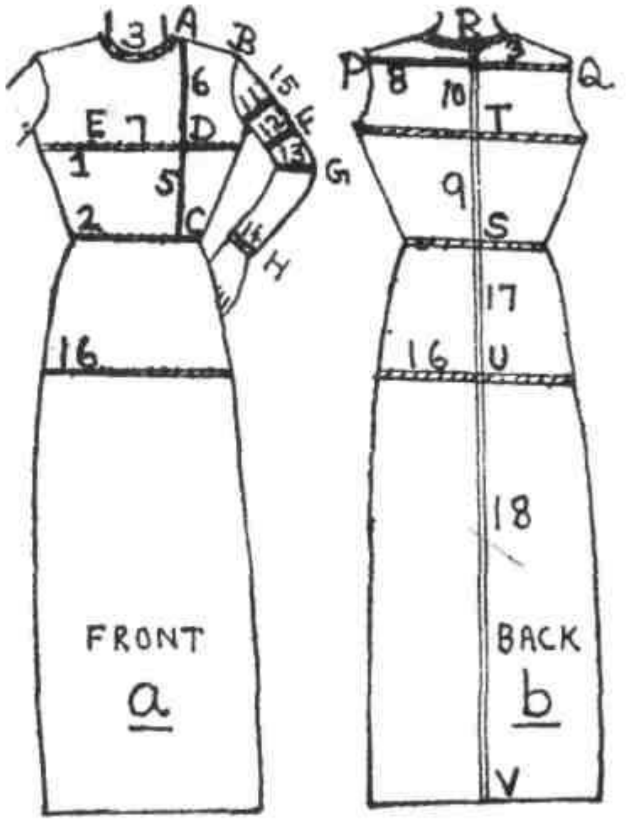


Fig.3.1(a, b) Ladies Body Measurements
(Source: Developed by the Contributor)

Bodice Measurements:

Bust**:** Measure around the fullest part of the bust (1) raising the measuring tape slightly to a level just below the shoulder blades at the back (Fig.3.1a).

Waist: Measure snugly around the waist (2- where the cord is tied) keeping the tape parallel to the floor (Fig.3.1a).

Neck: Measure around the neck, passing the tape just above the collar bone (3) in front and along the base of the neck at the back (Fig.3.1a).

Shoulder: Measure from the neck joint to the arm joint along the middle of the shoulder (A to B in Fig.3.1a).

Front waist length: Measure down from neck at highest point of shoulder to waist line through the fullest part of the bust (A to C in Fig.3.1a).

Shoulder to bust: Measure down from highest point of shoulder to tip of bust (A to D in Fig.3.1a).

Distance between bust points: Measure in the horizontal direction, the distance between the two bust points (D to E in Fig.3.1a).

Back width or across back measurement: Measure across the back from armhole to armhole about 3 inches below base of neck (P to Q in Fig.3.1b).

Back waist length: Measure from the base of neck at the centre back to waist line (R to S in Fig.3.1b).
Armscye depth: Measure from base of neck at centre back to a point directly below it an in level with the bottom of the arm where it joins the body (R to T in Fig.3.1b).

Sleeve Measurements

Upper arm circumference: Measure around the fullest part of the arm (11 in Fig.3.1a).
Lower arm: Measure around the arm at desired level corresponding to lower edge of sleeve (12 in Fig.3.1a).
Elbow circumference: Measure around the arm elbow (13 in Fig.3.1a).
Wrist: Measure around the wrist (14 in Fig.3.1a).
Sleeve length: For short sleeve length, measure down from tip of shoulder at top of arm to desired length of sleeve (B to F in Fig.3.1a). For elbow length sleeve measure from top of arm to elbow point (B to G in Fig.3.1a). For full length, bend the elbow slightly and measure down from top of arm to back of wrist passing the tape over the elbow point (B to H in Fig.3.1a).

Skirt Measurements:

Waist: Same as for bodice. (2 in Fig.3.1a)
Hip: Measure around the fullest part or the hip horizontally. (This level will be about 7 to 9 inches below the waist for an average figure). (16 in Fig.3.1a)
Waist to hip: Measure down from waist at centre back to fullest part of the hip (S to U in Fig.3.1b).
Skirt length: Measure down the centre back from waist to desired length of skirt (S to V in Fig.3.1b).

Leg Measurements:

Thigh round: Thigh round is measured around the thigh in Fig.3.2
Knee round: Keep measuring tape around knee. Fold the leg in such a way that thigh meets calf in Fig.3.2

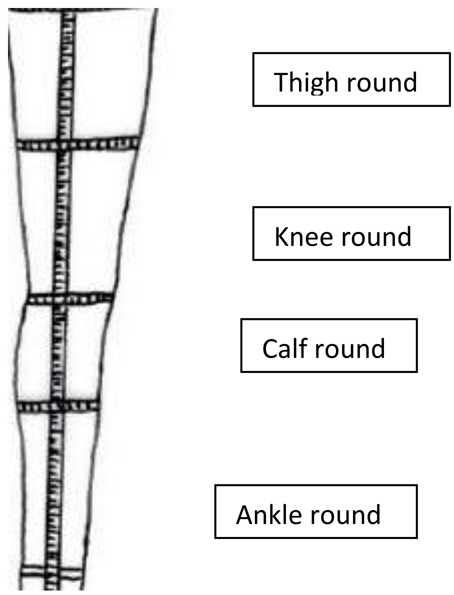


Fig.3.2 Ladies leg (Circumference) Measurements
(Source: Developed by the Contributor)

Calf round: Calf round is measured around the fullest part of calf in Fig.3.2
Ankle round: Ankle round is measured around the ankle in Fig.3.2.



a b c

Fig.3.3 Ladies leg (Length) Measurements
(Source:http://www.sewmamasew.com/2008/05/how-to-measurements/)

Inseam: Measure down the inner leg seam from crotch to the bottom of the leg as shown in Fig.3.3a.
Leg Length: Measure at the side from waist to the foot as shown in Fig.3.3b.
Bodyrise: Measure at the side seam from the waist line to the base of a Chair/flat surface when seated as shown in Fig.3.3c.
Cervical height: Take the height vertically from the nape of the neck to the ground. (R to V in Fig.3.1b).
Frock length: Measure down from neck at highest point of shoulder (A in Fig.3.1a) to desired length along the front.

Boys and Men's Measurements

Many measurements are common for both women's garments and men's garments (as given in Table. 3.1, 3.2 and 3.3). In addition to women's measurements fewer measurements are required for men's and boy's garments which are listed below:

Shirt Length
Shirt length should be measured from base of the neck to desired length usually just below where the seat meets the legs (Fig.3.4).



Fig.3.4 Shirt Length
(Source: http://www.kjbeckettbespokeshirts.com/taking-measurements-custom-shirts.htm)

Pant Length
Pant length is measured from waist to ankle along with side of the body (Fig.3.5)



Fig.3.5 Pant Length
(Source: http://controlledcommodity.com/pages/measurement-guide)

Cuff Measurement
Cuff measurement is estimated by measuring the wrist loosely and adding ½" overlap extension to it (Fig.3.6).



Fig.3.6 Cuff Measurement
Source:http://www.kjbeckettbespokeshirts.com/taking-measurements-custom-shirts.htm

Activity 1

Example: For the first measurement of Question 1, wrap a paper strip around the base of your thumb and cut it to the appropriate length. Then, to find the distance around the base of your thumb, measure the length of the paper strip.

Record all measurements to the nearest centimeter.

Use paper strips to find the following measurements.

Q.No.	Measurement	Length or Circumference
1.	Around the base of my thumb	___________ cm
2.	Around my wrist	___________ cm
3.	Around my neck	___________ cm
4.	Around my waist	___________ cm
5.	Width of my shoulders	

Activity 2

Fill in the Blanks:

Name ____________________ Partner's Name ________________


My partner's hand is about ___________ cm wide.


My partner's ear is about ___________ cm long.


My partner's waist is about ___________ cm around.


My partner's eyes are about ___________ cm apart.


My partner's arm is about ___________ cm long.


My partner's hair is about ___________ cm long.


My partner's thumb is about ___________ cm long.


My partner's wrist is about ___________ cm around.


My partner's fingernail is about ___________ cm long.

Activity 3

a. Fill the box with appropriate answer



A B

(Source: http://alittledecadence.tumblr.com/post/53218537264/lesson-1-body-measurements)

Write the appropriate answer in the box given below [A , B]

1. Taking neck measurement

Correct [ ]

Incorrect [ ]

RECORDING OF BODY MEASUREMENTS

1. One should try to know the customer's requirements, regarding the fit, style and shape of the garment (pockets, collar, buttons, seam, finish etc.) before taking measurements. A preliminary talk with the customer, showing fashion pictures or stitched garment will help one to understand the design.
2. The figure should be observed carefully and if any deviation in proportion is found, it should be recorded in the order book, without giving any idea of the deformity to the customer.
3. The person to be measured should stand erect, but in a natural pose, in front of a mirror.

4. Measurements should be taken comfortably without pulling the tape too tight or loose.
5. The measurements should be taken in proper order and with a certain sequence.
6. All girth measures should be taken tightly, as ease for movement is included in the draft.
7. To avoid any mistake, the measurements should be taken twice.

Exercise

Assignments
1. Illustrate with a neat sketch any three types of measurements used for construction of girls skirt garment
2. List the measurements used for construction of boys garment.

Assessment

Answer the following questions:
1. Explain with a neat sketch how to take bust measurement for blouse construction.
2. List any two importanct reasons for taking body measurements.

Multiple Choice Questions
Tick the most appropriate answer from the choices given below:
1. ---------------------------- is the measurement from the base of neck at the Centre back to waist line
   (a) Front waist length
   (b) Across back
   (c) Back waist length
   (d) Armscye depth

2. Cuff measurement is needed for the construction of ----------------------.
   (a) Shorts
   (b) Full Skirt
   (c) T-Shirt
   (d) None

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A
(a) Explained the method of taking body measurements.
(b) Explained the importance of taking body measurements

Part B
Discussed in class the following:
(a) The method of taking body measurements.
(b) Preparations for taking body measurements

Part C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	Yes	No
Method of taking body measurements		
State the importance of taking body measurements		

Session 2: Basic Pattern Making

Relevant Knowledge

Pattern making is an art. It is the art of manipulating and shaping a flat piece of fabric to conform to one or more curves of the human figure. Pattern making is a bridge function between design and production.

PATTERN MAKING TERMINOLOGIES

Pattern making is the foundation of garment production. To become a skilled drafter, one needs to be familiar with the pattern making terminologies.

Alter: It refers to change or revise a pattern or garment to suit individual sizing or desires. This could be making an item larger or smaller, adding darts, lengthening a bodice, etc.
Apex: The most prominent point of the bust
Armscye: Section of a pattern into which the sleeve is fitted
Backing: Fabric used as the back layer of another fabric.
Backstitch: Used at the beginning and end of a machine sewn seam to anchor the seam in place; it involves a couple of extra stitches back and forth.
Bias: Any line diagonal to the crosswise and lengthwise grains. When used to substitute crosswise or lengthwise grain in pattern placement, a bias cut pattern will cling to the figure following body curves closely.
Blend: Blending means the best qualities of each type either fibre/fabrics/ garment sections can be brought together. While blending two intersections need to be smoothed out (example joining a bodice block to a skirt block at the waistline).
Blocks: A sloper or block pattern is a custom-fitted, basic pattern from which patterns for many different styles can be developed. For example, a bodice sloper consists of bodice front, bodice back and sleeve blocks.
Bulge: A convex curve on a figure created from either bone or flesh and requiring at least one dart or dart equivalent to provide shaping of fabric in order to fit the figure.
Bodice: The part of a pattern or garment that runs from shoulder to waist.
Cutting Line: On a pattern, the outermost dark line is the line upon which you cut .
Croquis: A flat, 2-D sketch of a fashion model or models used to illustrate a garment or a collection of garments.
Dart: Darts are the distinctively triangular elements of a pattern that once sewn, enable a flat piece of fabric to take the shape of a curved figure. Darts can be creatively placed for fit or design elements.
Dart Intake: The intake is the extra space, or quantity of fabric, which ensures that when a dart is sewn, the end result isn't too tight.
Dart Point: The tip and pointed end of a dart.
Draping: It is the process of positioning and pinning fabric on a dress form to develop the structure of a garment design.

Drafting: A system of pattern making that depends on measurements taken from a form or model to create basic, foundation, or design patterns.
Ease: A pattern making factor used to allow extra fabric so that a garment will not be skin-tight.
Facing: Fabric sewn on the raw edge of a garment piece that is turned under and serves as a finish for the edge as well. This is an extra pattern piece that is shaped and cut to stabilize an outer curved edge. Sometimes the fabric can be folded instead of cut to create a facing, such as for some button and buttonhole closures.
Finish (An Edge): Turn under 1/4" and stitch, serge the edge, or follow any other method of finishing the edge, so that it doesn't ravel or cause a bulky problem.
Fold Line: In patterns the fold line indicates that the fabric to be cut needs to be folded on that line. The goal is to have a pattern piece that is cut out without a center seam.
Gather: Gathering is an effective and decorative way of distributing fullness over a given area.
Grading: It is a method of enlarging or reducing a pattern of a particular size proportionately to some other size.
Grain: It refers to the direction of yarn in a fabric.
Hem: It is made by folding an edge of a fabric back and fastening it in place either by hand / machine stitch.
Marker Making: Marker making is the process of determining a most efficient layout of pattern pieces for a style, fabric and distribution of sizes.
Notch: Notches are marks used to identify corresponding points along pattern cutting lines to identify where pattern pieces are to be joined together. This is particularly useful when joining convex and concave curves such as sleeves and armholes or a straight piece and a curved piece, such as a waistband and a skirt. Usually single notches identify front and double notches identify back.
Pattern: A pattern is the paper or cardboard template from which the parts of a garment are traced onto fabric before cutting out and assembling (sometimes called paper patterns).
Pleat: A fold in fabric that is either inverted or folded outward, is not sewn except on the top edge (as in a skirt or slacks waistband), and provides decorative or functional fullness.
Seam: The result when two pieces of fabric are sewn together along a line.
Seam Allowance: The fabric between the edge of the fabric and the line of stitching.
Selvedge: This is the finished edge of the fabric which generally does not fray.
Slit: An open part of a seam often found in skirt side or back seams.
Tack: A temporary stitch to hold pieces together, usually removed after final stitching.
Toile: This is a garment made from cheap fabric, used to 'prove' a pattern: you make this version up to ensure that the pattern fits: any alterations can be transferred to the pattern before cutting out the real version. It is also called as muslin.
Trim: Trim is any decorative item, ribbon, lace that is put on a garment that is being sewn. It is also used to define the act of trimming excess seam allowances or fabric with scissors.
Tuck: Tuck is a fold of a fabric and stitched in place to produce raised seam on right side of the fabric.

PATTERN MAKING METHODS

Pattern making is a highly skilled technique which calls for technical ability, and a sensitivity to interpret a design with a practical understanding of garment construction. For successful dress designing, pattern making forms the fundamental step. This function connects design to production by producing paper templates for all components.

A basic pattern can be prepared by one or two methods either by drafting or draping.
(a) Drafting
(b) Draping

(a) Drafting

Drafting may be defined as a system of drawing patterns on paper with mechanical precision on the basis of body measurements. This is an effective and economical method which can be learned easily.

Drafting is a full scale plan of a garment based on an individual's direct body measurements, which along with some proven formulae are used to develop the shape and fit of a particular garment. This plan or outline is known as Draft, which is then transferred on to the cloth to be cut. Drafts are also referred to as blocks, sloper, and master or foundation pattern. It consists of five pattern pieces – Bodice front, bodice back, skirt front, skirt back and the sleeve. The basic pattern can have only a minimum number of darts and seams and it should fit the body comfortably without being tight or loose.

Advantages:

1. A good pattern of the right size which has been adjusted to suit your individual requirements will enable you to obtain a good fit.
2. A pattern prepared on thick paper or card board can be preserved for a long time and can be used over and over again.
3. By manipulating the basic pattern pieces it is possible to produce patterns for complicated and original designs. (For example, the basic sleeve can be adapted for a puff sleeve or a bell sleeve.)
4. A paper pattern of a particular size can be used to make new patterns of proportionately larger or smaller sizes by following a systematic procedure called "grading".
5. Cutting with the help of a paper pattern is quicker and easier than drafting straight-away on the fabric.
6. Use of a paper pattern will enable you to cut the garment with a minimum amount of fabric because it is possible for you to try out the placement of pattern pieces in different ways till you have found the most economical way to keep them.

Disadvantages:

1. It is time consuming process as it takes lot of time to draft the pattern.
2. Unless the techniques and principles of drafting is known it is difficult for the persons to prepare paper pattern.
3. The paper pattern can be rarely used more than once unless copied on a thick sheet.

(b) Draping

Many designers prefer to use draping methods to create their original designs. A designer can easily see the proportion, fit, balance, and style lines of a design, exactly as it will look on the bodice. Working with actual materials gives a designer greater inspiration and a better indication of the flow and performance of a fabric.

Draping is the manipulation of fabric on a three dimensional form by a designer to obtain perfect fit and harmony between the fabrics and design of the garment and the silhouette of the individual.

Draping or modeling is the molding of material around a dress stand or human body for the purpose of designing a garment just like a sculptor. Modeling allows the fusion designer to work in 3 dimensions.

Advantages:

1. Various styles can be tried over the model.
2. Very simple to work once when the technique is learnt.

Disadvantages:

1. Draping skill is required.
2. It requires a model.
3. It requires lot of fabric.
4. Laborious process.
5. Not economical as fabric consumption is more.

TYPES OF PAPER PATTERNS

There are different types of paper pattern. They are

1. Standardized paper pattern
2. Individual paper pattern
3. Block paper pattern
4. Graded paper pattern
5. Commercial paper Pattern.

1. Standardized paper pattern

Paper pattern prepared using standardized body measurements are standardized paper patterns. This method is being followed in the training and tailoring schools.

2. Individual Paper pattern

The measurement of a particular person is taken and pattern is prepared using these individual measurements. The pattern prepared for a particular person will not suit other person. These are usually done at home and in some tailor shop.

3. Block paper pattern

Generally these are made with standard sizes with thick cardboards. These are mostly used in garment industries. The garment made out of these block patterns will fit for those who have measurements equivalent to that of the standardized body measurements.

In garment industry these type of pattern will be helpful to cut bulk amount of garment in less time.

4. Graded paper pattern

Pattern of five consecutive sizes (eg. 30”, 32”, 34”, 35”, 38” chest size) are marked in one single pattern. The required size according to the individual body measurement is traced separately, cut and used.

5. Commercial paper pattern

Development of Commercial patterns: Commercial patterns were first made in U.S.A in the 1850's by Ebenezer Butterick who was a tailor. In the beginning they had crude patterns in rough paper, for simple designs only. The first patterns were for men's and boys' clothing. Patterns for women and children were also developed later and became available commercially. Students may see fashion magazines like Vogue, McCall's Pictorial, Simplicity etc, and their pattern books.

Commercial patterns are usually done on tissue paper. Since tissue paper is not bulky, it allows many pieces of pattern to be packed compactly in an envelope. The front side of envelope contains front view, side view and back view of garment design along with the body measurement. While choosing a commercial pattern one must choose according to the body measurement. In commercial patterns seam allowances are included for safety. Patterns of established companies are usually printed and marked clearly with straight grain lines, seam lines, cutting lines, darts, centre lines and all the necessary construction details. Good patterns are carefully labeled with the following information : the pattern size, name of each pattern (back, front, sleeve etc), number of pieces to cut from each pattern piece etc. In addition some companies provide instruction sheets explaining the steps involved in using the pattern to cut out the garment, transferring pattern markings, and constructing the garment.

In India there are very few concerns making paper patterns probably because there is not much demand for them. Unlike in foreign countries we have the facility to get our clothes custom tailored at fairly reasonable rates. Housewives and women who know a little bit of tailoring prefer to make their own patterns rather than buying expensive readymade patterns. This may be another reason for the lack of demand for commercial pattern.

USES OF PAPER PATTERNS

The paper patterns for various styles can be prepared and stored easily. The basic pattern with alterations at points can be prepared which later can be used to develop other styles. A number of styles can be developed in a short time and used comfortably even if the person using paper patterns do not have any idea of drafting patterns. They are the cheapest ways of designing used for constructing garments of varied styles.

Exercise

Assignments

1. List any ten pattern drafting terminologies
2. Collect the picture of draping done on a model from internet and paste it in the file.

Assessment

Answer the following questions:

1. Explain the methods of pattern making
2. Explain the meaning of any ten pattern making terminologies

Multiple Choice Questions

Tick the most appropriate answer from the choices given below:

1. ------------------------ is the diagonal of the fabric
   (a) Bias grain
   (b) Straight grain
   (c) Cross grain
   (d) None

2. -------------- is enlarge or shrink of current pattern
   (a) Ease
   (b) Grade
   (c) Dart
   (d) Notch

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A

(a) Explained the drafting terminologies.
(b) Explained the methods of pattern making.

Part B

Discussed in class the following:
(a) Definition and meaning of drafting
(b) Definition and meaning of draping
(c) Methods of pattern making
(d) Types and uses of patterns.

Part C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	**Yes**	**No**
State drafting terminologies		
Explain methods of pattern making		
Describe types and uses of paper patterns		

Session 3: Importance and Principles of Drafting Patterns

Relevant Knowledge

IMPORTANCE OF PATTERN DRAFTING

Pattern Drafting requires immense skills and practice. It is where pattern pieces are drawn on paper according to body measurement which becomes the foundation for designers to create garments. Pattern Drafting is an important part of fashion designing as

- It minimizes the chances of any fault during cutting on the fabric
- Correct estimate of the required material can be made.
- Pile fabrics are easy to cut when a draft had been prepared.

PRINCIPLES OF PATTERN DRAFTING

Drafting can be done on ordinary brown paper which should not however be too thin. To obtain an accurate draft, use a sharp pencil, and a ruler for drawing straight lines. To get the corners at right angles, keep an L scale or set squares ready. Before drafting, it is important to understand the procedures and instructions clearly, and to have practice in drawing a well-balanced pattern with smooth curves and straight lines. One must understand the following principles before starting to attempt drafting.

1. Patterns must be made larger than body measurements to allow for freedom of movement, ease of action and comfort in wearing. Recommended ease allowance for various parts of the body are listed below.

   Bust 3" to 5" (3" for a tight fitting garment and 5" for loose fitting one); waist ¼" to ½"; hip 3" to 5"; upper arm 3" to 4"; arm hole depth 1"; bodice length nil; sleeve length nil; skirt length nil.
2. For symmetric designs where the right and left sides are alike, paper pattern for half front and half back only need to be made: For the bodice, drafting is started with the back part. For sleeves, full pattern must be drafted.
3. It is better to draft the primary or basic pattern blocks—plain bodice, plain sleeve, plain skirt without seam allowances. When this is done, it should be made sure to leave seam allowances while laying out the pattern on the material at the time of cutting.
4. The following construction details and information should be recorded and marked clearly (Fig.3.7).
   a. Name of each piece of pattern (bodice front, bodice back, sleeve etc)
   b. Number of pieces to be cut with each pattern piece. (For example, for a back open dress one have to cut 1 front, 2 backs and 2 sleeves),
   c. If seam allowances are not included in the draft, it should be mentioned. If seam allowances are included, seam lines and cutting lines should be clearly shown,

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Note: *Drafts given in this book are not made using any drafting scale. Students should use drafting scale while preparing the drafts.*

d. Length wise or straight grain line should be drawn with a red pencil as shown (<-->) on all pattern pieces. This line indicates that the pattern should be kept on the cloth in such a way that the line is parallel to the length of the cloth or the selvedges. It is usually drawn parallel to the centre front and centre back edges of the pattern,
e. Provide matching notches or balance marks if necessary along seams to show which seams are to be joined together and where,
f. Centre front and centre back line should be marked. It is advantageous to cut outward notches at centre front and centre back of pattern pieces because at the time of assembling the garment, notches on collars can be matched to notches on the neck line of garment etc.
g. Fold lines should be clearly shown. Fold lines appear along centre front or centre back edges and sometimes along hems to show where the material is to be folded,
h. Dart markings, pleat markings etc. should be clearly shown.

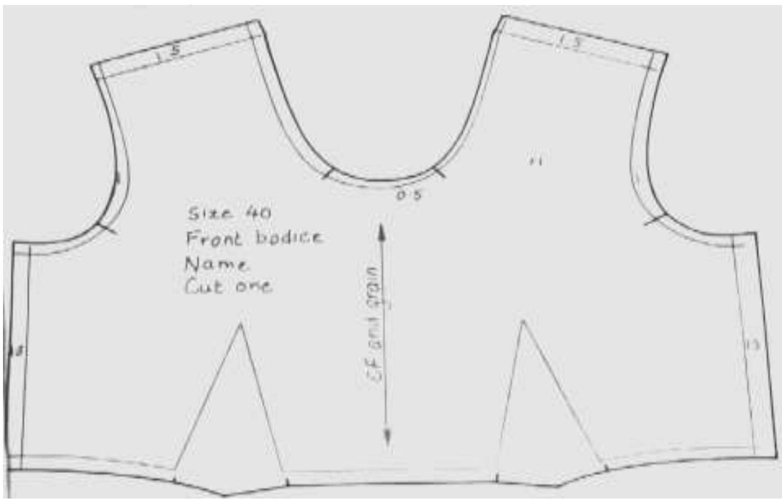
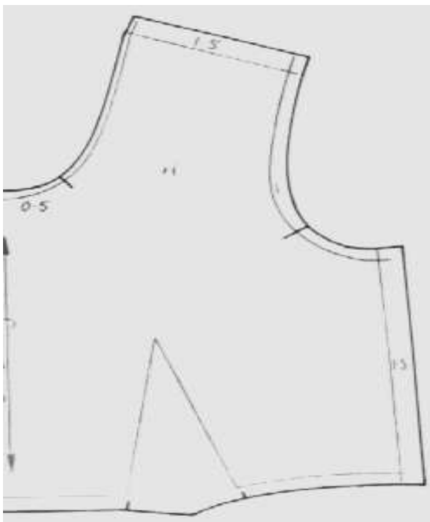


Fig.3.7 Paper Pattern Details

Activity 1

Fill the blanks using appropriate answer:



1. Is the arrow mark indicates grain line Yes / No ______________
2. Is seam allowances included in the pattern Yes / No ______________
3. Is it a sleeve pattern Yes / No ______________

STEPS IN DRAFTING CHILD'S BODICE AND SLEEVE PATTERN

Sample measurements (7 years old): Chest 24" waist length 10 ½", waist 23", back width 11", sleeve length 5".

Basic Bodice Front and Back

i) *Bodice Pattern*
For children, back and front pattern can be drafted within the same rectangle because it is not necessary to make the front larger than the back *(Fig.3.8)*.

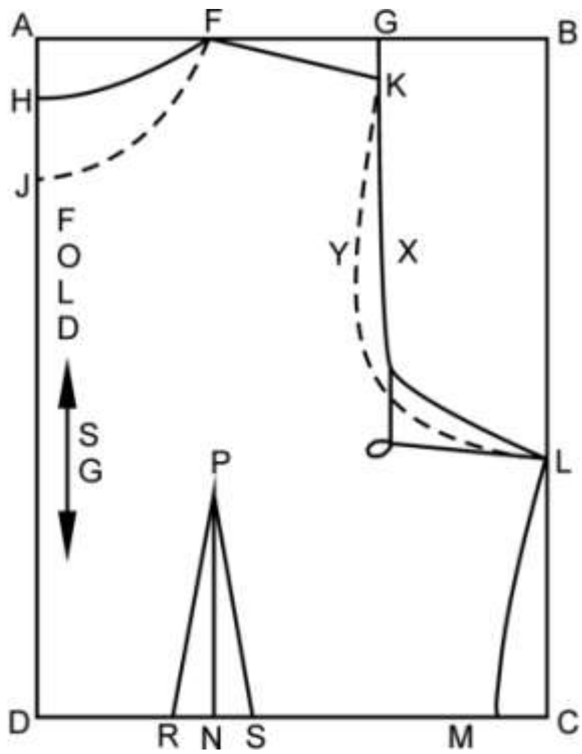


Fig.3.8 Basic bodice pattern

Construct rectangle ABCD with the following measurements:

- AB = ¼ (bust + 5" ease allowance) = ¼ bust + 1 ¼" = 7 ¼",
- AD = BC = back waist length + ½".
- Mark AG = ½ back width = 5 ½",
- AF = 1/12 chest = 2",
- AH = 1"
- AJ = 1/12 chest + ¼" = AF + ¼" = 2 ¼" and GK = 1".
- Connect HF with bold line as shown. This is the back neck line.
- Connect JF with dotted line as shown. This is the front neck line.
- Connect FK with a straight line. This is the shoulder seam.

- Mark BL = ¼ chest = 6".
- Draw GO parallel to and equal to BL.
- Mark KX = 1/3 KO and XY = ½".
- Connect KXL as shown with a bold line. This is the back armscye line.
- Connect KYL as shown with a dotted line. This is the front armscye line.
- Mark CM = ½". Connect LM. This is the side seam.

For dart, mark DN = ½ DM—½" and NP=CL -1". Mark R and S. ½" on either side of N and connect RP and SP.

***ii) Basic Sleeve pattern** (Fig.3.9)*

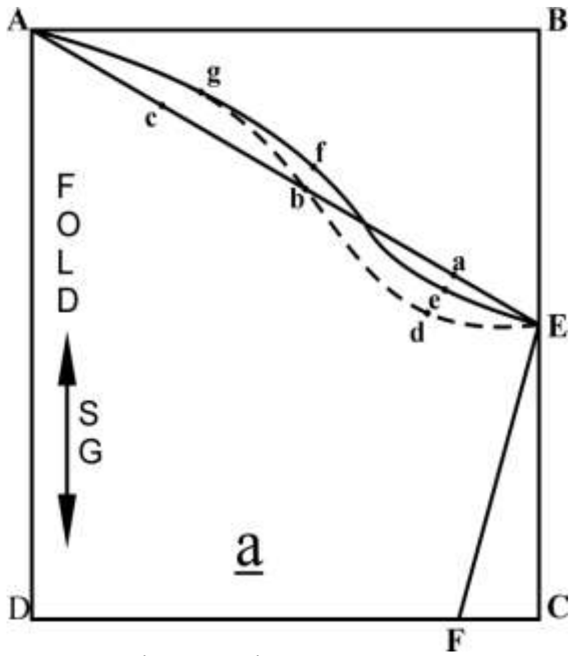


Fig.3.9 Basic sleeve pattern

In Fig.3.9 AD is on fold and is equal to sleeve length.
AB= ¼ bust— ¼".
Mark BE = ½ AB and DF = ½ lower arm + ¼". Connect AE.
Divide it into 4 equal parts and mark a, b, c.
Mark cg=½",   bf = ¼", ae = ¼" and ad – ½".
Connect AgfeE (back armscye line) and AgbdE (front armscye line).

STEPS IN DRAFTING ADULT'S BODICE AND SLEEVE PATTERN

Sample measurements: Bust 34", Waist 26", Hip 36", Back width 14", Shoulder to bust 9", Distance between bust points 6 ½", sleeve length 7".

Basic bodice front and back

***Bodice pattern** (Fig.3.10)*
Construct rectangle ABCD as shown with the following dimensions, leaving an extension of 2 inches beyond CD and AB.

AB = ½ (bust + 3 ½” ease allowance)
BC = Back waist length + ½”

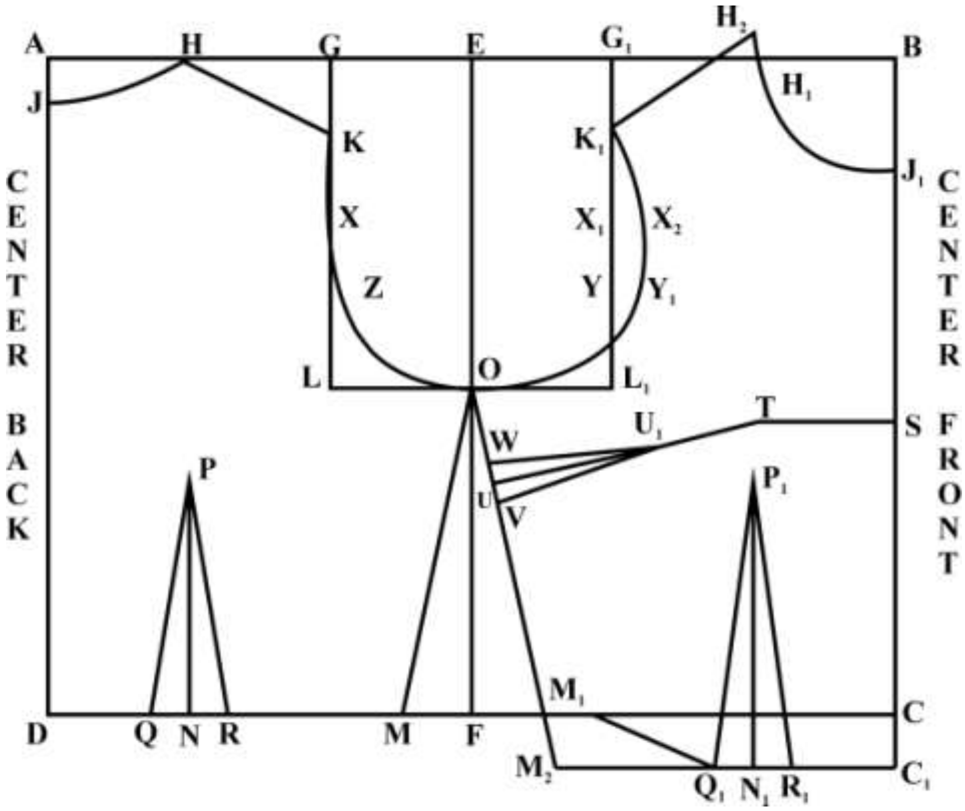


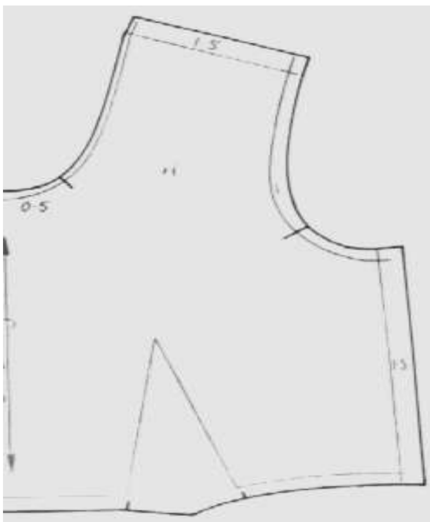
Fig.3.10 **Adult’s Bodice Pattern**

Label AD as centre back and BC as centre front
Mark AE = ½ AB - ½”. This will make the front width of the garment 2” larger than the back width. For children and women with flat bust, take AE = ½ AB. Draw EF parallel to BC.
Back pattern is drawn within rectangle AEFD as explained below. Mark AG = ½ back width.
Mark AH = 1/12 bust
Mark K, 1” below G and mark J, 1” below A.
Connect JH as shown. This is the back neck line.
Connect HK with a straight line. This is the back shoulder seam.
Mark EO =1/4 bust -1”. For those with bust measurement less than 30”, take EO =1/4 bust - ½”.
Draw GL parallel and equal to EO and connect LO.
Mark KX= 1/3 KL Connect KXO as shown for back armscye line.
Mark one Z as shown (midpoint of OX). This notch should be matched to the notch on the back part of sleeve pattern while assembling the garment.
Calculate back waist measurement and front waist measurement as follows.
Back waist =1/2 waist - ½”.
Front waist = ½ waist + ½”. Those who with trim figure and flat stomach can take back waist and front waist equal.
Mark DM = ½ back waist +1 ¼”.
Connect OM for back side seam.

Back dart: Mark N, midpoint of DM. Draw NP, perpendicular to DM and equal to OF – 1”. Mark NQ = NR = ½”. Connect PQ and PR.
Front pattern is drawn within rectangle BCFE as follows.
Mark H2, 1/4” to ½” above H1.
Join H2J1for neckline and H2K1for shoulder line.
Draw G1L1O as shown. Divide K1L1 into 3 equal parts and mark X1 and Y as shown.
Mark YY1= 3/8 and X1X2 =1/2”.
Connect K1X2Y1O for front armscye line.
Mark two notches at Y1 to match and join sleeve.
Mark CM1 = ½ front waist + 1 ¾”.
Connect M1 C1 as shown for front hemline.
Front waist line dart:
BS = shoulder to bust point + ¼” ease.
ST = ½ distance between bust points.
Mark P1, 3/4” below T. Draw P1 N1 as shown. This is the fold line of the dart.
Mark Q1 and R1 ¾” on either side of N1 and connect P1Q1 and P1R1.
Side seam Dart: This dart may be introduced as follows. Mark M2 1” below M1 and connect M2C1 and OM2 as shown. On OM2, mark U about 1 ½” below the level of T and connect UT.
On UT, mark TU1 = 1 ½”.
Mark V and W ½” on either side of U and connect VU1 and WU1 as shown.
Cutting out of pattern: Cut out back pattern along JHKXOMDJ and front pattern along J1H2K1X2Y1OM2C1J1.

Basic Sleeve Pattern
The sleeve is drafted in the same manner as child’s sleeve. Hence separate diagram is not given for adult sleeve pattern and refer Fig.3.9.

Activity 2
Using the pattern given below identify the types of lines marked on it.



Mark the numbers against the above pattern
(a) Centre front line

(b) Neck line
(c) Shoulder line
(d) Armhole line
(e) Side seam line
(f) Waist line
(g) Dart line

Exercise

Assignments

1. Collect the picture of a draft sleeve pattern from internet and paste it in the file.

Assessment

Answer the following questions:

1. Explain the Principles of pattern drafting and pattern details
2. Explain the importance of pattern drafting

Multiple Choice Questions

Tick the most appropriate answer from the choices given below:

1. ----------------------------drawn on paper according to body measurement which becomes the foundation for designers to create garments
   (a) Drafting
   (b) Draping
   (c) Commercial pattern
   (d) None

2. ------------------------ must be made larger than body measurements to allow for freedom of movement, ease of action and comfort in wearing.
   (a) Pattern
   (b) Grade
   (c) Notch
   (d) None

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A

(a) Explained the Principles of drafting.
(b) Explained the importance of pattern drafting
(c) Explained the drafts of children bodice and sleeve
(d) Explained the drafts of ladies bodice.

Part B

Discussed in class the following:

(a) Steps in drafting basic bodice front and back

(b) The importance of pattern drafting.

(c) Principles of pattern drafting and pattern details

(d) Steps in drafting basic sleeve

Part C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	**Yes**	**No**
State the steps in drafting child's and adults basic bodice and sleeve pattern.		
Understood the importance and principles of drafting		

Session 4: Drafting of Baby Frock and Bloomer

Relevant Knowledge

DRAFTING OF BABY FROCK

Garment Description

A woman or a girls dress either stitched in one piece up to the knee length or top and skirt cut separately and stitched together. The suitable fabric may be cotton, terry cotton, satin etc. This is a plain type of frock, with square neckline and secretes sleeves and has a joint at the waist. If waist belt (for tying at the back) is required, use two separate pieces, each 3 to 4cm wide and 40 to 60 cm. long and join them at the waist side seam.

Measurement required:

1. Chest	-	60cm (24”)
2. Waist	-	56cm (22’’)
3. Bodice length	-	25cm (10’’)
4. Full length	-	66cm (26’’)
5. Shoulder	-	14cm (5½”)

Instruction for Drafting (*Fig.3.11):*

Square lines from 0, on a four layer fold with folds at 2-0 and 6-0.

Front

1-0 = one eight chest
2-0 = bodice length plus 1.5 cm plus 6.5 cm (2 ½ ‘’).
Square out from 1 and 2
3-0= One –twelfth chest, or plus 1 cm (¼ “)or to taste.

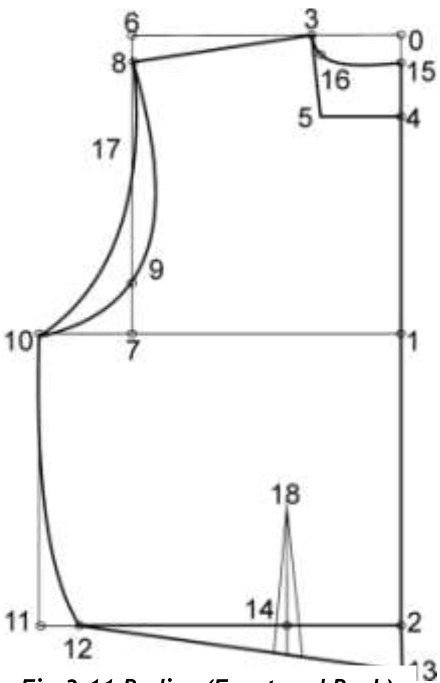


Fig.3.11 Bodice (Front and Back)

4-0 =one –eight chest or to taste.
Square out from 4-5. (Fig.3.11)
5-4 =3 to 0 less 1cm (¼”)
Join 3-5.
6-0=shoulder plus 1cm (1/4”).
Square down from 6 -7.
8-6 = 1.5cm (½”). Join 8-3
9-7=about 2.5cm (1”).
10-1= one fourth chest plus 4cm (1 ½ ”).
Shape armscye 8-9 -10 as shown.
Square down from 10-11.
12-11=1.5cm (½”)
Shape side seam 10-12.
13- 2 =1.5cm (½”).
Shape bottom 13-12.
14-18 one twelfth chest plus 1.5cm (½”)
Take 1 cm (¼”) dart at 14 for front and back

Back
15-0= 2 to 2.5 cm (¾ to 1''). Square out from 15-16
16-15 equal and same as 5-4.
Joint 16-3
Shape armscye 8-17-10 as shown
Allow 2cm (¾") inlays at 12-10.

Skirt (Fig.3.12)

The round or circumference of the skirt is generally kept double as they just measure. For example, for 60cm (24'') chest , the skirt should be 120cm (48''). This proportion varies according to the thickness of materials, type of fashion and customer's taste. For thin and fine- materials this proportion is increased, for thick ones, it is decreased.

Full length of frock less bodice length=length of the skirt.

Take two layers of cloth (one for the front and other for back), with a fold at 1-0.
1-0 = skirt-length plus 1.5cm (½").
2-0 = half chest and one fourth skirt round plus 1cm (¼").
3-1 = same as 2 to 0.
Joint 2 -3
4-3 = 2cm (¾")
Shape bottom 1 – 4.
5-2 = 2.5cm (1"). Join 5-4
Keep 4 to 7.5cm (1 ½ to 3"), below1-4 for inside turning.

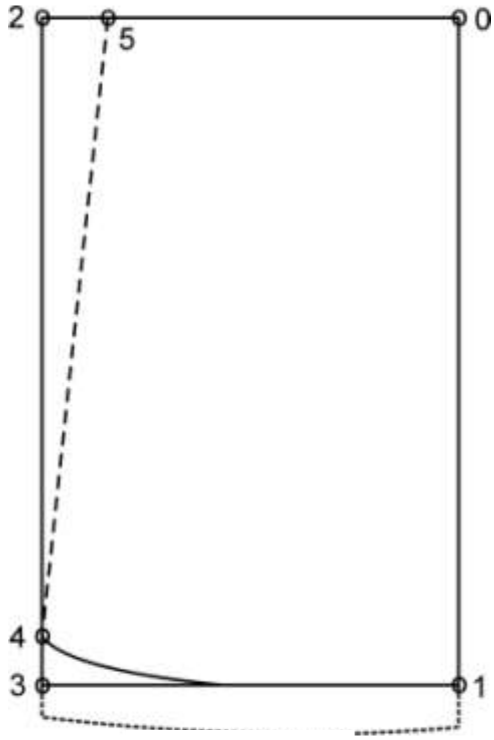


Fig.3.12 Skirt

Activity 1

1. The quarter pattern for baby frock (bodice pattern and skirt pattern) is given in Fig.3.11 and 3.12. Visualize and draw the half pattern for the same in the file.

DRAFTING OF BLOOMERS

Garment Description

It is a loose knicker type garment worn from waist to knee gathered closely at waist and knee or ankles. The suitable fabric may be linen, cotton, denim and terry cotton.

It is an under garment with wide, loose pants gathered at the knee and formerly worn by girls and women for exercising and athletics. The sample measurements given are for a 5 year old girl.

Measurements Required:

Hip - 24"

Length - 10”
Thigh circumference - 13½”

***Instructions for Drafting** (Fig.3.13):*
Draw rectangle ABCD where
AB =1/3 hip + 2’’
BC = knicker length (AD should be on fold.)
Mark BE =1/3 hip
CC1 =1/2” to 1’’
AG=1’’
AF=1/4 hip + 1’’
GH =1/4 hip+3/4” (parallel to AF), connect all lines as shown.
Cut both layers of paper along DC1EFG
Now lift the upper layer and cut along EHG.
Open out the pattern (shown in fig.3.14) to view half pattern of Bloomer.

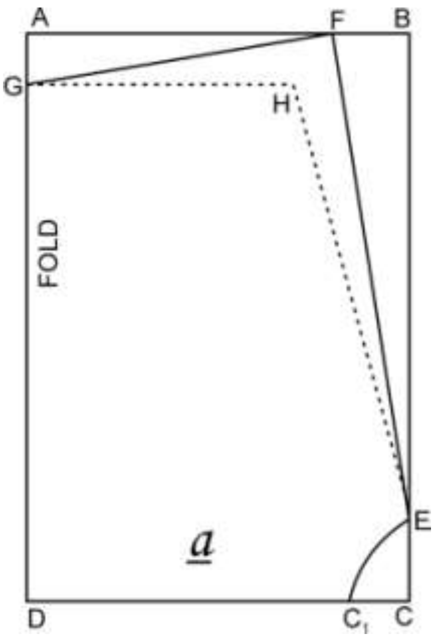


Fig.3.13 Bloomer

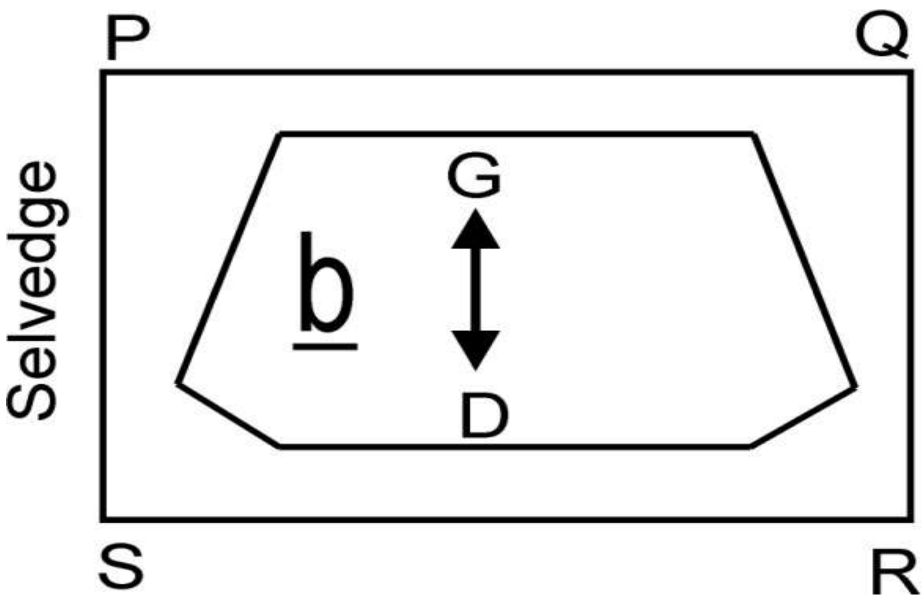


Fig.3.14 Bloomer (Half Pattern)

Exercise

Assignments
1. Collect pictures of bloomer from internet and paste it in the file.

Assessment

Answer the following questions:
1. Explain the drafting paper patterns for baby frock.
2. Explain the drafting paper patterns for bloomer.

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A

(a) Explained the method of drafting paper pattern for baby frock
(b) Explained the method of drafting paper pattern for Bloomer

Part B

Discussed in class the following:
(a) Pattern drafting for baby frock.
(b) Pattern drafting for bloomer.

Part C

Performance Standards
The performance standards may include, but not limited to:

Performance Standards	**Yes**	**No**
Draft paper pattern for baby frock		
Draft paper pattern for bloomer		

Session 5: Paper Pattern for Baby Frock and Bloomer

Relevant Knowledge

PAPER PATTERN FOR BABY FROCK (Quarter Pattern)

Front and Back Yoke

1. Keep the things ready for drawing a sewing block pattern (Fig.3.15)



Fig.3.15

2. Square lines from 0
   0-1 = chest length & 0-2 = bodice length (Fig.3.16)



Fig.3.16

3. 0-3 = Neck width, 0-4 = Front Neck Length
   Square down 3 and 4 to get 5 and shape the front neck line inside the rectangle 0-3-5-4. (Here drawn is square neck line) (Fig.3.17)



Fig.3.17

4. 6-0= Half shoulder, 6-8 is shoulder slope
   Square down 6 and 1 to get 7 (Fig.3.18)

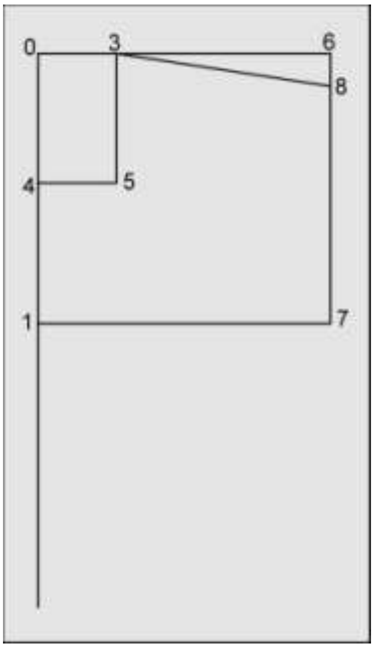


Fig.3.18

5. Mark 9 for back armhole shaping and 1-10 is the chest line (circumference) (Fig.3.19)

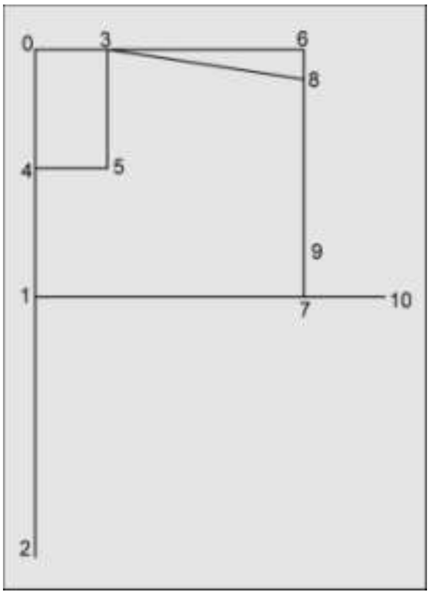


Fig.3.19

6. Shape Back armhole 8-9-10. (Fig.3.20)

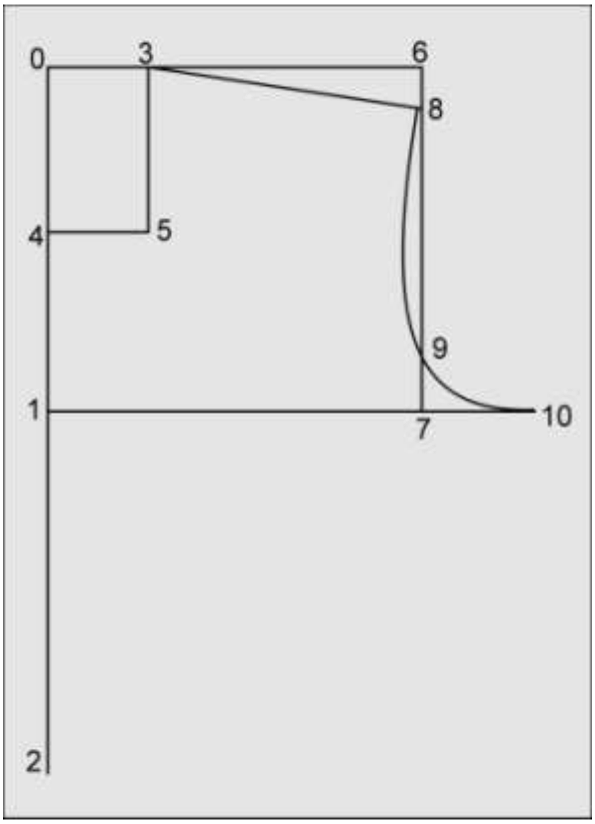


Fig.3.20

7. Square down 10 and 2 to get 11 where 2-11 is the waist line (Fig.3.21)
   Mark point 11-12& 2-13 for waist line shape and take a dart at point 14 perpendicular to bust point for shape and fit of waist line(Based on waist circumference) (Fig.3.22).

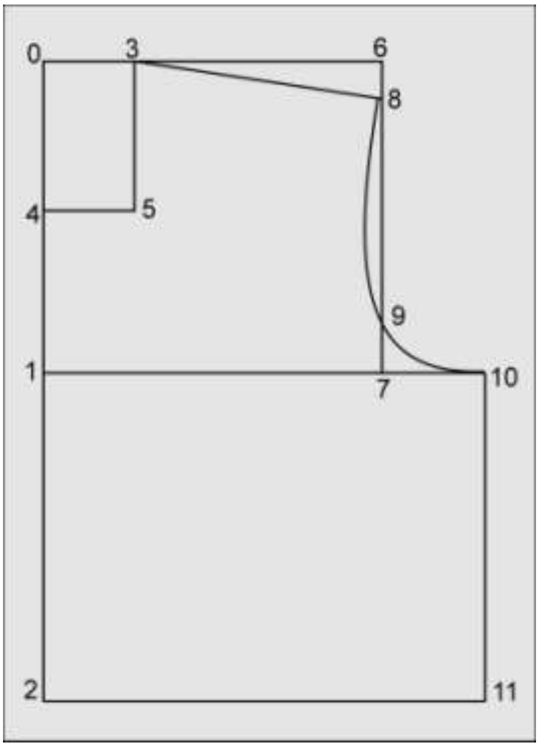


Fig.3.21

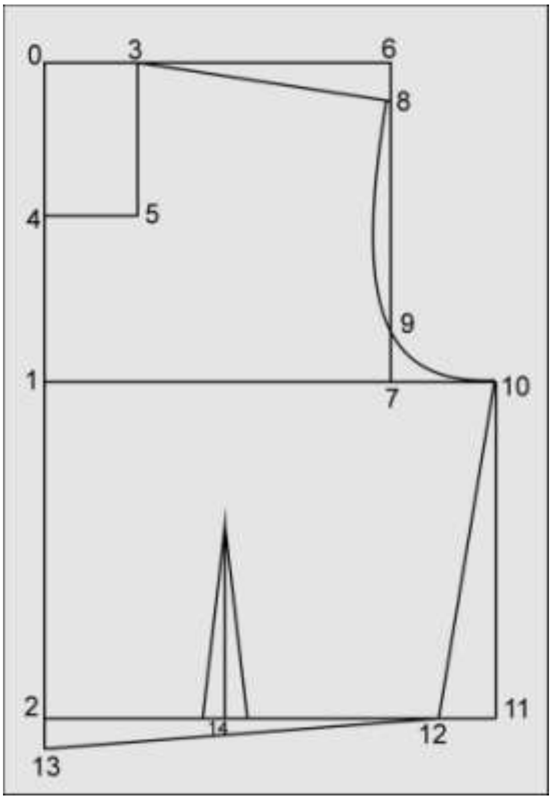


Fig.3.22

8. Mark 0-15(Back neck length) & 3-16 for back neckline and shape it as per your taste (within 0-3-16-15). (Fig.3.23)

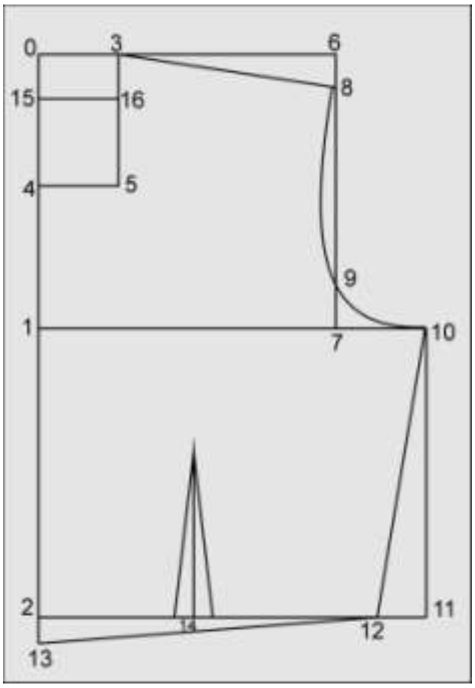


Fig.3.23

9. Mark 17 for shaping back armhole 8-17-10. (Fig.3.24)
10.

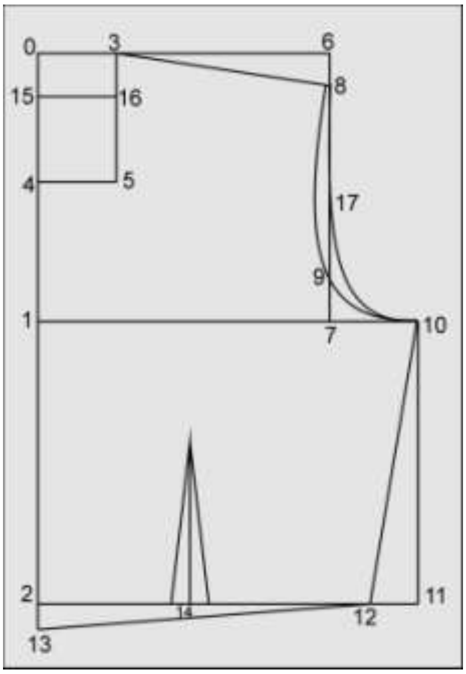


Fig.3.24

11. Enter Pattern details inside the pattern to avoid confusion of the cutting master during cutting. (Fig.3.25)

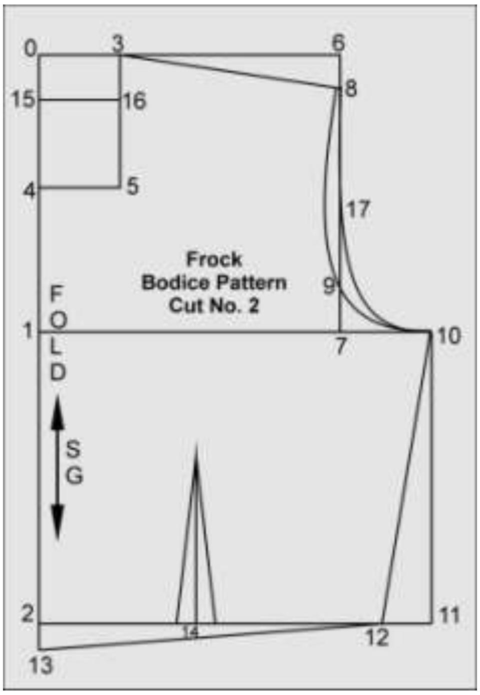


Fig.3.25

12. Mark seam allowance (Fig.3.26)

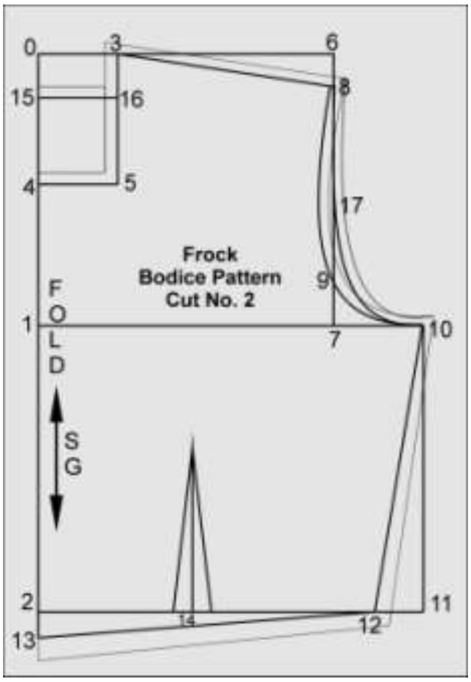


Fig.3.26

Skirt

13. Draw a rectangle where 0-1& 1-3 is skirt width plus extra fabric for fullness (pleats) and 0-1 & 2-3 is the skirt length. (Fig.3.27).

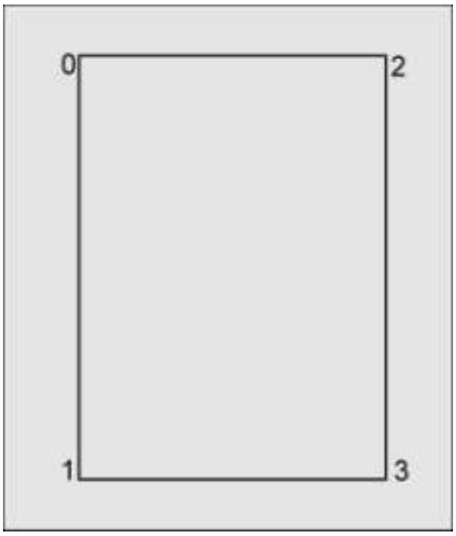


Fig.3.27

14. Mark point 4 for bottom shaping and point 5 for waist shaping (Fig.3.28)

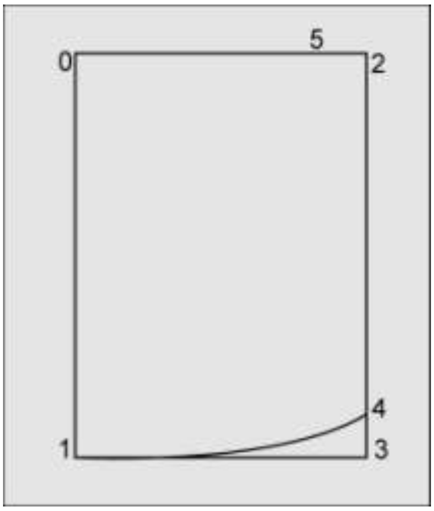


Fig.3.28

15. Leave extra fabric at the bottom below 1-4 for in turns of the skirt. (Fig.3.29)

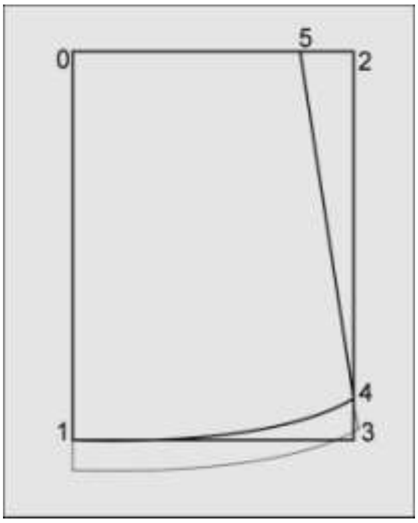


Fig.3.29

16. Enter Pattern details inside the pattern to avoid confusion of the cutting master during cutting. (Fig.3.30)

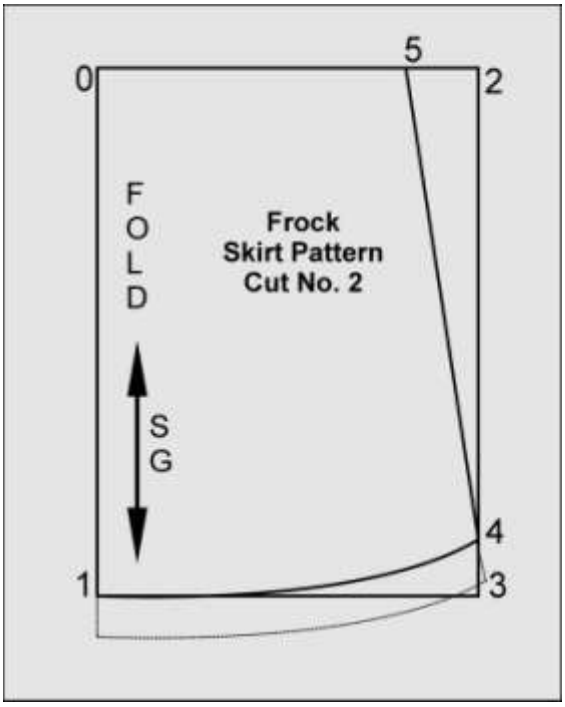


Fig.3.30

17. Mark seam allowance (Fig.3.31)

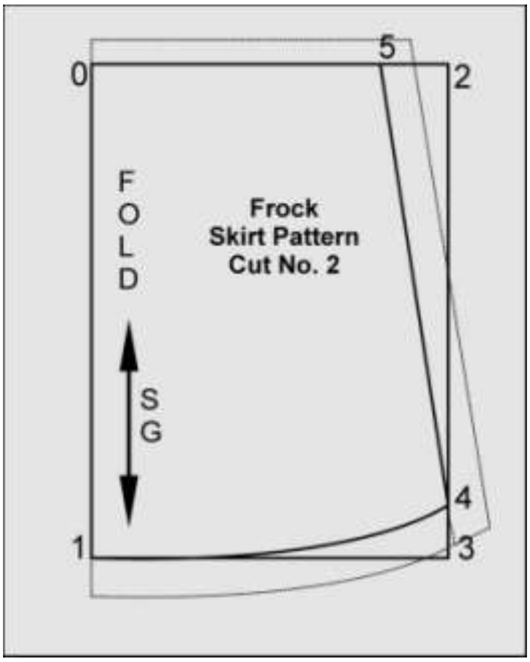


Fig.3.31

Activity 1:

1. Try to create pattern for sleeve in the same way as explained above using the drafting instructions for sleeve (Refer session 3).

PAPER PATTERN FOR BLOOMER

1. Draw a rectangle where AB & CD is the width and AD & BC is the length. (Fig.3.32)

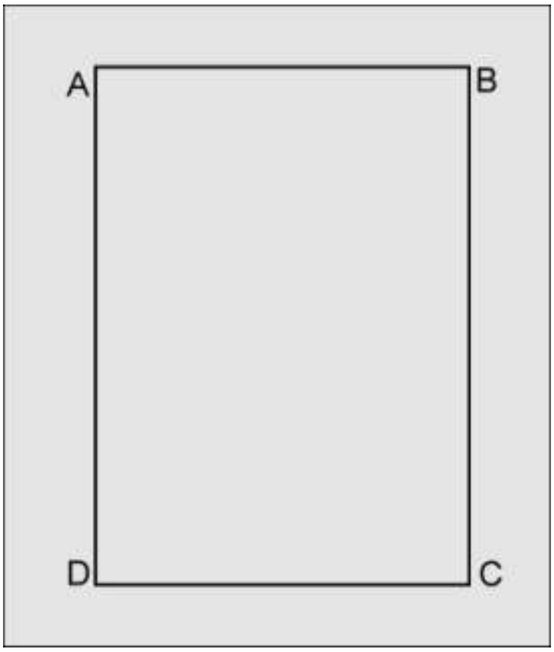


Fig.3.32

2. Mark AF (hip circumference) and CE crotch opening. Shape FE. (Fig.3.33)

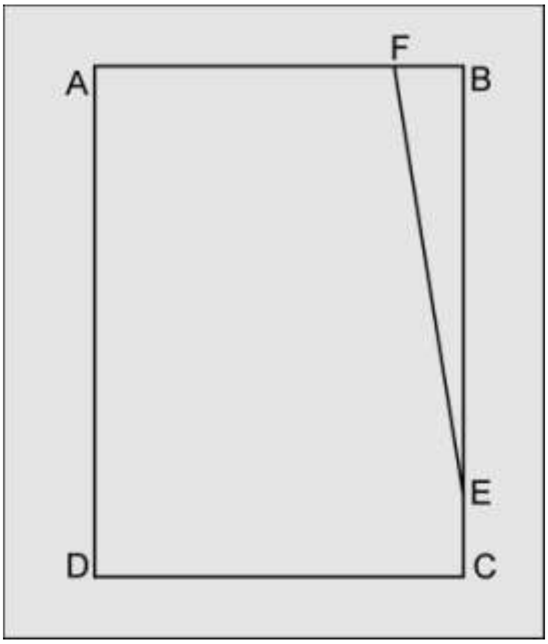


Fig.3.33

3. Mark CC1 for crotch opening and shape EC1(Fig.3.34)

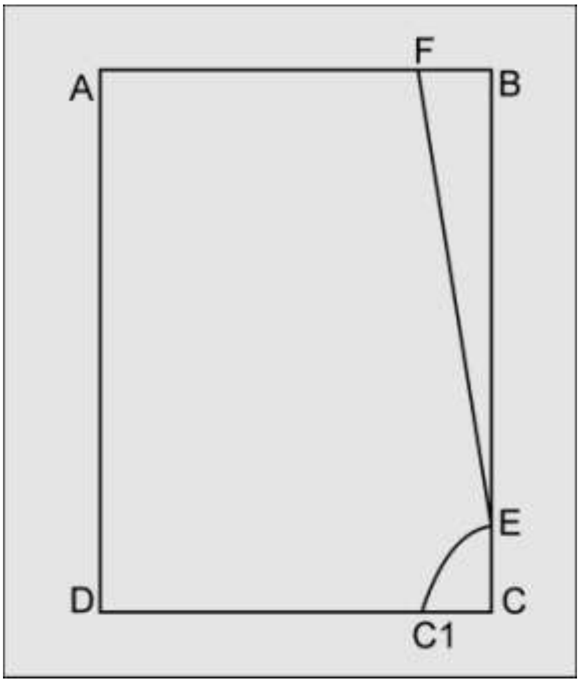


Fig.3.34

4. Mark point G for waist line shape (Fig.3.35)

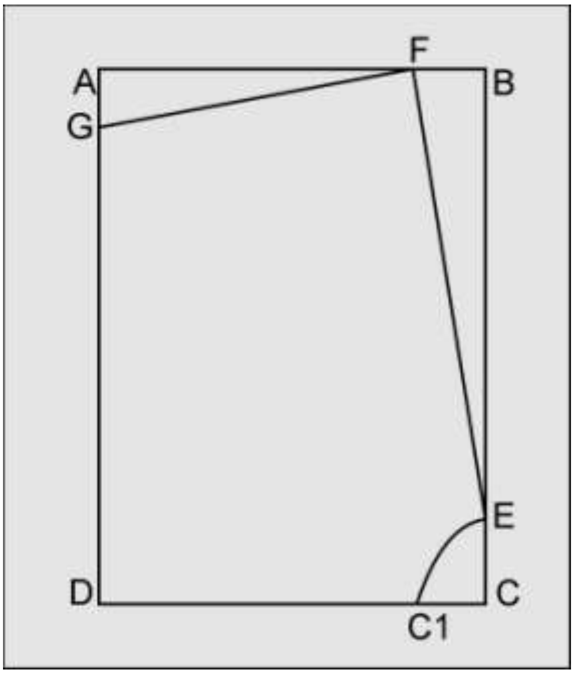


Fig.3.35

5. Enter Pattern details inside the pattern to avoid confusion of the cutting master during cutting. (Fig.3.36)

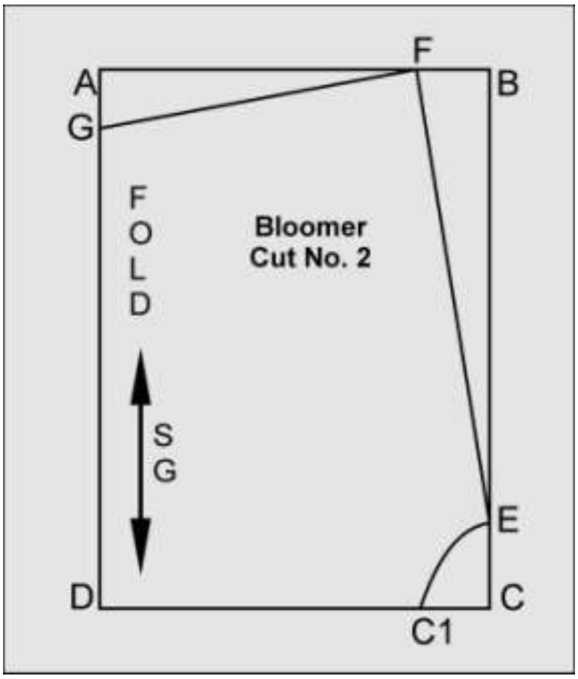


Fig.3.36

6. Mark seam allowance (Fig.3.37)

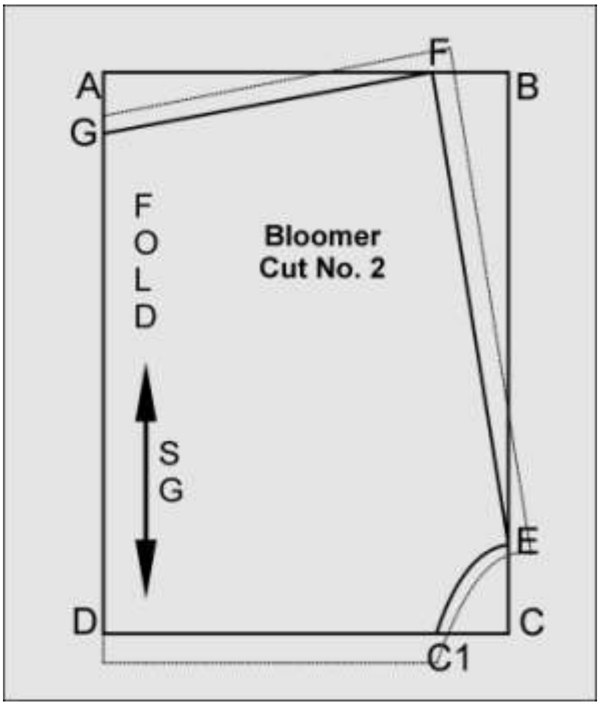


Fig.3.37

Exercise

Assignments

1. Collect pictures of different types of bloomers and baby frocks and paste them in the file.

Assessment

Answer the following questions:

1. Explain how to create paper patterns for baby frock.
2. Explain how to create paper patterns for bloomer.

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A

(c) Explained the method of making paper pattern for baby frock
(d) Explained the method of making paper pattern for Bloomer

Part B

Discussed in class the following:
(a) Pattern making for baby frock
(b) Pattern making for bloomer

Part C

Performance Standards
The performance standards may include, but not limited to:

Performance Standards	**Yes**	**No**
Prepare paper pattern for baby frock		
Prepare paper pattern for bloomer		

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Apparel, Made-ups and Home Furnishing

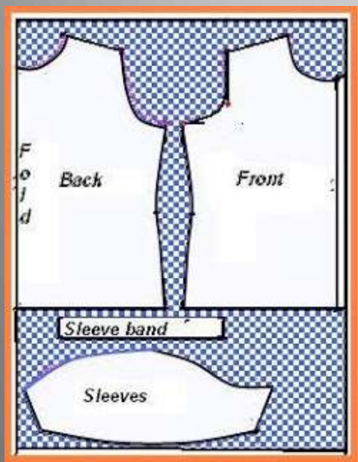
NSQF Level 2 – Class X

HSA 204-NQ2014 : BASIC GARMENT CONSTRUCTION

Student's Workbook







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Introduction

In garment construction, the drafted paper patterns are placed on the fabric with a proper layout, and then cut on the fabric. All these parts are then joined together to form the dress. Garment making is a technical accomplishment that requires knowledge of fabrics, principles of drafting, pattern layout, cutting and clothing construction and the skills involved in it.

This unit provides the knowledge of terms related to garment construction, preparation of fabric for layout and cutting and the sewing techniques.

Session 1: Garment Construction Terminologies

Relevant Knowledge

GARMENT CONSTRUCTION TERMINOLOGIES

Anchoring stitches: Machine stitches sewn with zero stitch length to keep from pulling out, or the end of seam when one stitch backwards for a few stitches to anchor the stitch.
Apex: Highest point on a rounded bulge.
Appliqué: A surface embellishment made by cutting fabric or lace designs and stitching them to the foundation fabric.
Back tack: The end of seam when one stitch backwards for a few stitches to anchor the stitch.
Backstitch: It is a strong stitch that doubles back on the last stitch. It is perfect for securing seams and mending. There are a variety of backstitch styles; one version is the pick stitch.
Baste: Temporary long running stitches created by hand or machine to hold fabric in place before the final stitching.
Basting needle: A sharp, long hand sewing needle.
Bias: True bias is a cut made on an angle 45 degrees to the selvage. This direction allows for the most stretch. Bias refers to any line diagonal to the crosswise and lengthwise grains.
Bias binding: Also called bias tape, a bias cut strip used to bind or cover edges. It is used for binding the curves.
Bias draping: Hanging bias cut fabric over a dress form to design a garment and make a pattern.
Bicep circumference: The measurement around the fullest part of the arm.
Binding: Strip of fabric used to cover a seam edge or enclose raw edges.
Blanket stitch: Hand stitch used for finishing a fabric edge. A smaller version is a buttonhole stitch.
Blind-hem: It is a hem where the stitches do not show.
Block: It is a master pattern.
Bodice: Upper body portion of a garment that runs from shoulders to waist.
Bodkin: Long, flat, needle-like tool used to thread elastic through casing.
Boning: Narrow strips used to stiffen a garment, usually made of plastic, metal, or bone.
Buckram: A heavy, coarse cotton fabric used for stiffening garments and hats.
Casing: Folded and stitched tunnel of fabric that holds elastic, cording, or boning.
Chain stitch: A stitch formed by making connected loops that form a chain.
Chalk-trace: Pin through pattern markings, remove pattern leaving pins in place, and chalk mark the fabric using pins as a guide.
Collar stand: It is a band between the shirt and the collar on a shirt or blouse.
Constant reference point: A point that never changes
Cross Grain: It refers to the yarn direction that is perpendicular to selvedge.
Dart(s): It is folded and stitched wedges of fabric that shape a garment over curves.

Double needle: Two machine needles attached to a single shaft that sews two parallel rows of stitches at once with two spools of thread and one bobbin. Sometimes it is called as twin needle.
Double-fold hem: A hem that's folded once for the hem allowance and a second time to enclose the raw edge.
Ease: It refers to the difference between body measurements and garment measurements. Also it is defined as the amount of space in a garment that allows comfortable movement.
Edge stitch: It is a kind of straight stitching very close to the edge of a seam, trim, or outer edge. It secures seam allowances, prevents the edge from stretching, and supports the fabric.
Facing: It is used to finish exposed edges as a partial lining for center front, neckline, or armhole edges.
Facing width: The width of the facing.
Fade-out pen: A fabric pen with ink that disappears 12 to 24 hours after marking.
Finger press: A method of temporarily flattening a seam using the heat from your fingers.
Fray: On constant rubbing of fabric or similar material become worn at the edge.
Free-motion embroidery: Hand-guided stitching with dropped feed dogs on hooped fabric.
French curve: A drafting tool that enables one to draw smooth curves.
Fusible: Fabric that has heat-sensitive adhesive on one side that enables it to bind to another fabric.
Fusible basting tape: A temporary adhesive tape that permanently fuses.
Fusible interfacing tape: Available in a variety of narrow widths, this tape heat fuses to fabric to stabilize a seam or edge.
Godet: A triangular fabric piece set into a skirt hem to add fullness.
Gore: Vertical garment sections, usually on a skirt.
Gore seams: Seams that hold gores together.
Grain: The orientation of the threads in woven fabric: lengthwise and crosswise. The lengthwise grain is parallel to the selvage and is the warp; cross-grain threads cross the grain and are perpendicular to the selvage.
Grain line: The long arrow symbol printed on a pattern that corresponds to the fabric grainline. It is always placed along the lengthwise grain.
Hand: The way a fabric feels in the hand, e.g. smooth, soft and crisp.
Hand-overcast: A hand stitch that wraps around an edge like a spiral.
Hem: Finished bottom edge of a garment.
Hem allowance: Hem allowance is the distance between the cutting line and the hemline.
Hemline: Hemline is the lowest edge of the garment once the hem is sewn.
Hip curve: A curved ruler.
Hoop: A plastic, metal, or wooden hoop that holds fabric tight while sewing or embroidering.
Horsehair braid: A netlike ribbon woven on the bias with synthetic threads. It is stretchy and takes curves easily. Often used to add support to a hem.
Interfacing: Sew-in or fusible fabric used to stabilize the fashion fabrics. Can also add body, reinforce, or shape.
Invisible stitch: Made at 1/16-inch or 1/8-inch intervals through the side fold of the turn-under allowance. This technique hides the stitch in the fold along the edge.
Invisible zippers: A zipper designed to disappear into a seam when sewn in.

Lapel: The joining of a coat or shirt with the collar of the garment.
Lining: Fabric (usually silky) that covers the construction details on the inside of the garment.
Looper stitches: These are stitches formed by the looper section of a serger or overlocker.
Match point: A point marked on one pattern piece for the purpose of matching a similar point marked on a second pattern piece.
Multisize pattern: A commercial pattern printed with several sizes on each pattern piece.
Muslin: 1) Unbleached cotton fabric, 2) Term used by designers to describe a test garment that checks fit and style.
Nap: A fabric texture that runs in a particular direction and requires all pattern pieces to be cut facing the same direction.
Notches: Pattern marks shaped like diamonds or triangles that are printed on the cutting line of a pattern to indicate where the seams should meet.
Outline: The outline of a pattern is usually the cutting line, unless it is marked as a fold line.
Pattern drafting: Drawing a paper pattern by positioning lines, points, and curves in a prescribed manner.
Piping: A narrow piece of bias-cut fabric folded over a cord and inserted into the seam between the edge and facing of a garment as a decorative trim.
Placket: The overlapping fabric that covers an opening in a garment and supports or hides the closures.
Point presser: A small tool used to get inside a tight corner or small space for ease of pressing.
Point turner: A tool used to turn a sewn corner to the right side with a sharp, crisp point.
Preshrink: Wash fabric before cutting or sewing.
Princess seam: A vertical seam on blouses, dresses, jackets, or coats, usually positioned between a side seam and the center front and back, and passing over the bust apex.
Quilt: Coverlet or wall hanging made from small pieces of fabric sewn together in batted layers and topstitched, or the action of topstitching the quilt layers together.
Raw edge: Unfinished, cut edge of fabric.
Rise: The distance between the waist band and the crotch seam on pants.
Rolled hem: The edge of fabric is rolled and stitched for a very narrow hem.
Ruching: Gathering. Sometimes whole garment sections are gathered into a seam(s) or can also be ribbons of fabric gathered and used as trim.
Seam allowance: It is the area between the edge and the stitching line on two (or more) pieces of material being stitched together. It can range from 1/4 inch wide (6.35 mm) to as much as several inch.
Seam finish: Any technique that finishes the raw edges of a seam.
Seam roll: A cylindrical-shaped pressing tool used to press open long seams or to slide inside a sleeve for creaseless pressing.
Selvedge: Tightly woven factory edge of fabric that runs parallel to the lengthwise grain.
Set-in sleeve: A sleeve sewn into an armhole or armscye.
Shank: The back of a button through which the thread passes to attach the button to the garment.
Slash and spread: Cutting a pattern and spreading it open along the cutline to add fullness to a section of the pattern.

Sleeve board: Small ironing board that fits inside a sleeve.
Sleeve cap: The area of the sleeve above the biceps line.
Slipstitch: Used to join two folded edges or one folded edge to a flat surface, for an almost invisible stitch.
Stabilizer: A fabric under layer used to hold the shape of the fashion fabric or support its strength.
Stay stitch: Stitching placed on or just outside the seamline, used to stabilize the fabric and keep it from stretching.
Stitch length: Length of a stitch determined by the movement of the feed dogs.
Stitch line: It refers to a line in the paper pattern where one complete movement of a threaded needle passes through a fabric or material over the line.
Tambour needle: A thin, sharp pointed hook used for applying strung beads or sequins from the wrong side, or sewing decorative chain stitches from the right side.
Tapestry needle: A needle with a blunt tip and large oval-shaped eye made for decorative stitching with bulky threads or yarns.
Thread tail: An untrimmed thread end.
Thread-trace: Transfer markings from the pattern to the fabric by hand basting stitches to duplicate pattern markings.
Topstitch: Decorative row of stitches sewn on the right side of a garment.
Tuck: A stitched fold of fabric either decorative or used to shape a garment.
Tulle: A fine netting commonly used for veils or gowns.
Twill tape: A non-stretching tape used to stabilize seams or edges.
Underlap: The lower fabric of two overlapped pieces of fabric.
Underlay: A layer of fabric underneath another layer of fabric.
Underlining: A layer of lightweight fabric sewn into a garment to reinforce seams, add weight or firmness, hide construction details, and provide a layer for inner stitching.
Warp: Lengthwise thread in woven fabric that runs parallel to selvedge
Wash away stabilizer: Provides support to a fabric, then dissolves in water. It is especially useful when embroidering onto fabric.
Weft: The crosswise threads in a woven fabric traveling from selvedge to selvedge.
Whiskers: Tiny, frayed threads from raw seam edges.
Yoke: A panel either across the shoulders or at the waistline into which the bulk of the garment is sewn.
Zigzag stitch: Commonly used Z-shaped machine stitch sometimes used to finish raw edges or to sew a stretch seam.

*(**Source**: http://www.threadsmagazine.com/item/15750/sewing-terms-to-know/page/2)*

Exercise

Assignments

Write any fifteen garment construction terminologies in the file.

Assessment

A. Answer the following questions:

1. Define selvedge.
2. Enlist any ten garment construction terminologies and explain the same?
3. What do you mean by:
   - Apex
   - Bias Binding
   - Chalk trace
   - Cross grain
   - Facing width

B. Multiple Choice Questions

Tick the most appropriate answer from the choices given below:

1. --------------------- is a surface embellishment made by cutting fabric or lace designs and stitching them to the foundation fabric.
   (a) Applique
   (b) Back tack
   (c) Armscye
   (d) None
2. ---------------- is a fusible fabric used to stabilize the fashion fabrics and also add body, reinforce, or shape.
   (a) Hooks
   (b) Interfacing
   (c) Lining
   (d) None

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A

(a) Explained garment construction Terminologies

Part B

Discussed in class the following:

(a) The various garment construction Terminologies.

Part C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	Yes	No
State different garment construction Terminologies		

Session 2: Preparation of Fabric for Cutting

Relevant Knowledge

PREPARING THE FABRIC FOR CUTTING

The following basic terms should be understood before proceeding to prepare the fabric for cutting.

Grain

Grain refers to the direction of yarns in a fabric. Woven fabrics are made up of lengthwise and crosswise or filling yarns interlaced at right angles to each other. These yarns are called the lengthwise and crosswise grains of the fabric. On patterns, lengthwise grain is referred to as straight grain. Bias grain is any direction on a fabric that does not exactly follow a lengthwise or a crosswise yarn. True bias makes a 45° angle with the lengthwise and crosswise yarns (Fig.4.1a).

Lengthwise yarns are usually stronger and heavier and stretch less than crosswise yarns. This property can be used to identify the lengthwise grain on a piece of fabric which has no selvedge. Stretch the fabric along one grain, holding it taut with your two hands held 2”-3” apart; then stretches it similarly along the perpendicular grain. Of the two directions, the one which stretches less is the lengthwise grain.

Selvedge

This is the finished edge of the fabric which runs lengthwise (See Fig.4.1a) Selvedge is woven differently with extra yarns and stronger yarns than the rest of the fabric. In a good quality fabric, the selvedge is very compactly woven and is about half an inch wide. On poor fabrics, selvedge will be narrow and loosely woven.

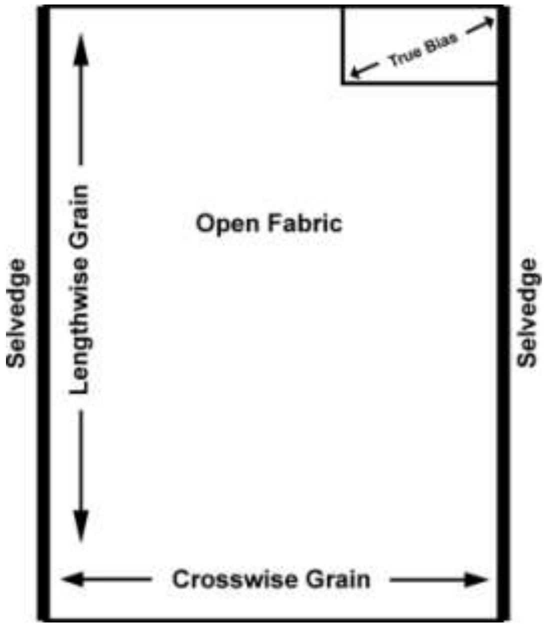


Fig.4.1a Grain
(Source: Developed by the Contributor)

Grain and its Types

On grain: A fabric in which the crosswise yarns run exactly at right angles to lengthwise yarns and which has right-angled corners is said to be on grain or grain perfect (Fig.4.1b).

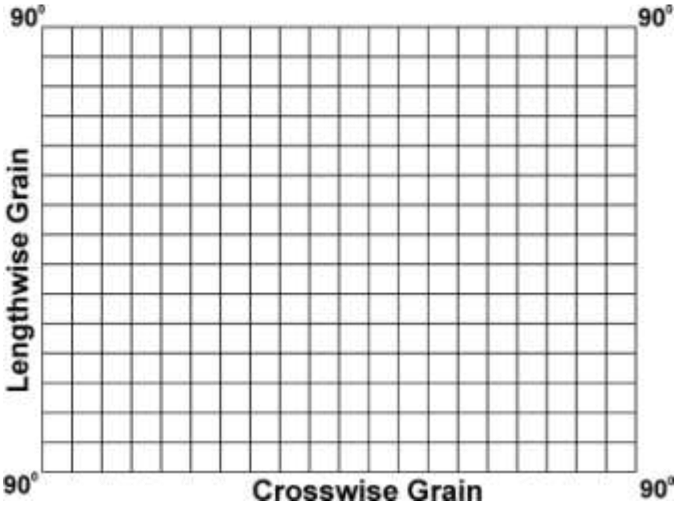


Fig.4.1 b On grain
(Source: Developed by the Contributor)

Off grain: A fabric in which the crosswise are not running exactly at right angles to lengthwise yarns is referred to as off grain fabric. This happens because the fabric has been pulled out of shape and pressed in that position during finishing at the factory (Fig.4.1c).

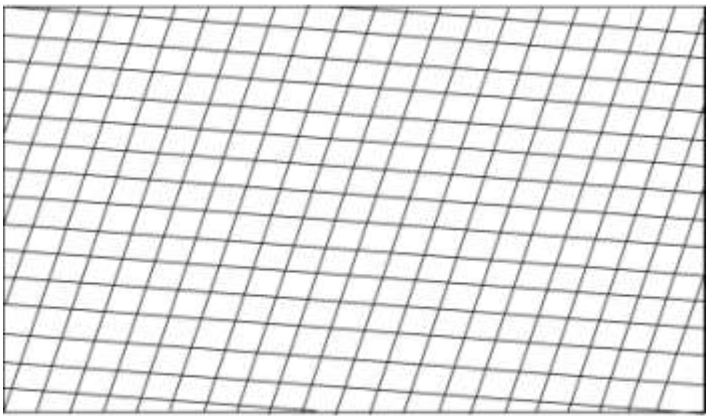
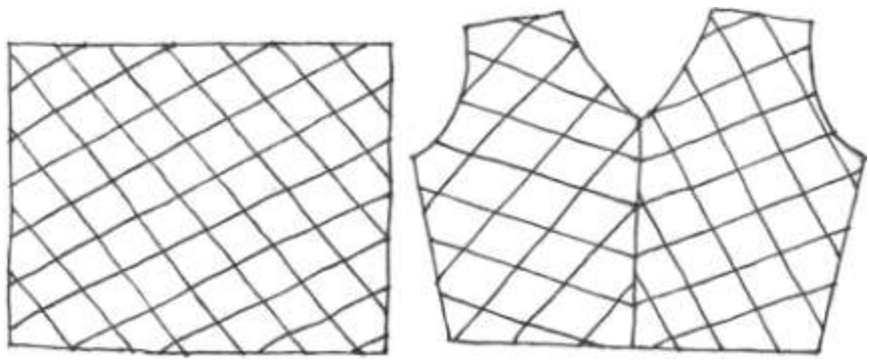


Fig.4.1c Off Grain
(Source: Developed by the Contributor)

Off grain print: In a print made of lines, checks, etc, if the lines do not run straight along lengthwise or crosswise grain, it is referred to as an off grain print (Fig.4.1d). Fabrics with off grain prints should not be selected for garment construction because with such fabrics it will be almost impossible to make the right and left half of the garment identical in design or to match the design along seams, centre front, centre back etc (See Fig. 4.1e.).



(d) (e)

Fig.4.1(d,e) Off grain Print
(Source: Developed by the Contributor)

With the grain, Against the grain: When one strikes the bias-cut edge of a fabric with the thumb and forefinger. It will be found that if the stroking is in one direction the yarns tend to come apart causing the edge to fray, while the stroking is stroked in the opposite direction the yarns close up compactly with the rest of the fabric. The latter direction is said to be with the grain and the former, against the 'grain in Fig.4.1f, the arrow points in the direction with the grain. While working (cutting, stitching, ironing etc.) along a bias edge, one should obviously work with the grain to avoid stretching or ravelling. This is especially important for fabrics which ravel easily.

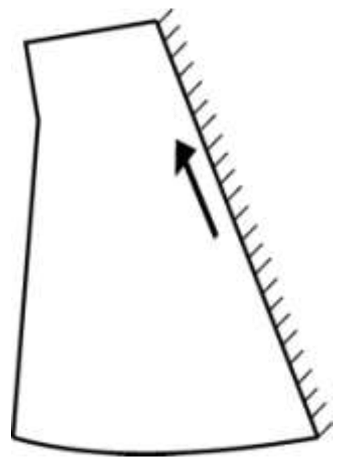


Fig.4.1f With and against the grain
(Source: Developed by the Contributor)

Importance of Grain in Cutting and Construction

The manner in which a garment is cut in relation to the grain lines of the fabric affects the durability, fit and hang of the garment. Garment should be cut in such a way that the lengthwise grain is parallel to garment length along centre front (along A B in Fig. 4.1h), centre back, centre of sleeve (along C D in Fig.4.1g) etc.

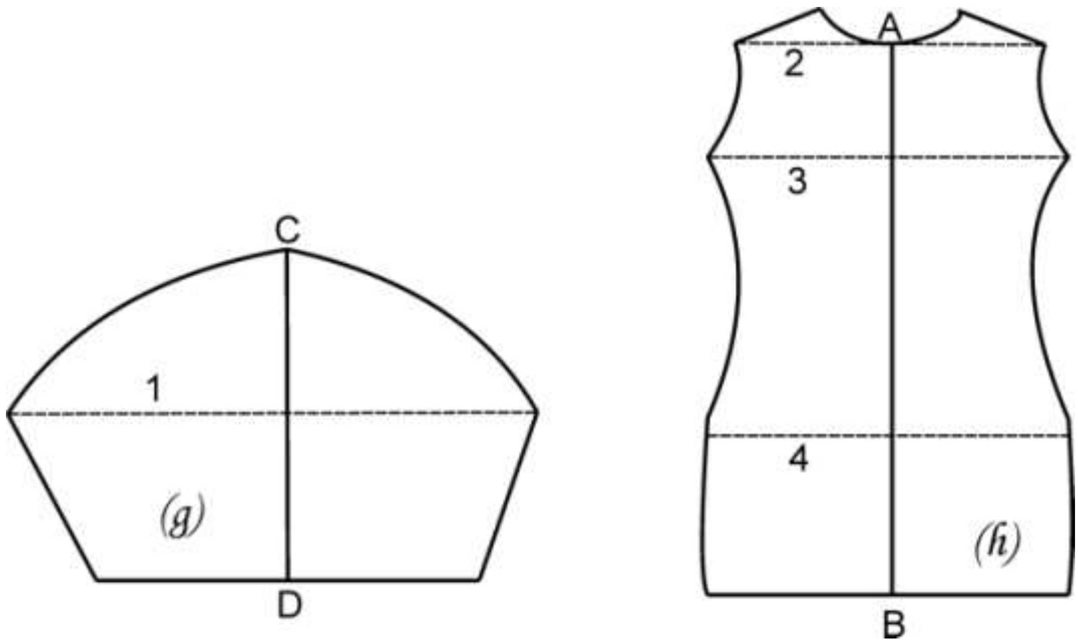


Fig.4.1(g, h) Importance of grain in cutting and construction
(Source: Developed by the Contributor)

Because of the greater strength of lengthwise yarns, garments cut on lengthwise grain hang better and will be more durable. Ruffles, pleats and gathers will fall in graceful folds only if the folds follow lengthwise yarns. Moreover, the additional stretch of the crosswise grain will be needed across the body for movement.

An exception to the above rule is the case of yokes which are usually cut on crosswise grain (centre front and centre back edge parallel to crosswise grain). Sometimes yokes are cut on bias for design interest. In striped fabrics one may cut the front and back of the garment on true bias to get the chevron effect.

In a well-constructed garment, not only should the lengthwise grain run lengthwise on the body but the crosswise grains should be at right angles to the lengthwise grain or parallel to the floor at the base of the neck (line 2 in Fig.4.1h), across the bust (line 3 in fig.4.1h), across the fullest part of the hip (line 4 in Fig. 4.1h), at the base of the sleeve cap (line 1 in Fig.4.1g) etc. This cannot be achieved when using an off grain fabric for cutting. The result will be an ill-fitting garment which has wrinkles, lacks balance and is uncomfortable to wear. If a dress design should look balanced on the figure, the right half and left half should be identical in design, shape and grain.

In this context special care must be exercised when buying fabrics with printed stripes or checks. If these prints happen to be off grain, as in (Fig.4.1d), one can balance the design on the right and left half of the garment only by disregarding the grain, and this will create problems as mentioned earlier. Even so, this is preferable to making the fabric grain- perfect at the expense of balance in design. These problems do not arise in the case of woven checks and stripes.

STEPS IN PREPARING THE FABRIC FOR CUTTING

Preparation of fabric involves the following four steps which are explained in detail further below:

1. Checking each end of the fabric to see whether it is straight along a crosswise yarn. If it is not, cut it along a crosswise yarn .This process is called straightening or evening the ends.
2. Checking the fabric to see whether it is grain perfect. (i.e. whether the corners form right angles). Straighten the grains, if the fabric is off grain.
3. Shrinking the fabric if it has not been preshrunk by treatment like sanforising.
4. Pressing the fabric and removing all creases.

Checking each End of the Fabric and Straitening it

First off all check whether the fabric end is cut or torn. In a torn fabric, the fabric end will be straight along a cross wise yarn and will not need straightening. Torn edge can be recognized by the tiny ends of lengthwise threads visible along this edge.(see edge AB in fig .4.2a).

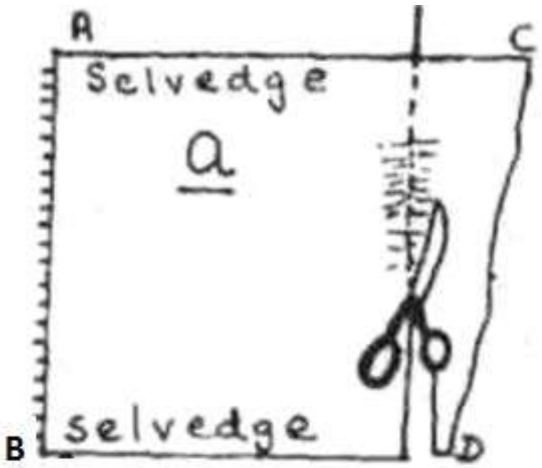


Fig.4.2a Checking of fabric ends and straightening
(Source: Developed by the Contributor)

If the fabric has cut ends, examine them to see if they are cut along crosswise yarns. If not, straighten them as explained below. (in fig. 4.2a). CD is a cut end that needs straightening).

Methods of straightening fabric ends: The methods used for straitening the ends of different types of fabrics are the following:

(a) Loosely woven fabrics or fabrics with prominent crosswise yarns can be cut straight along the visible crosswise yarn.(Fig.4.2b)

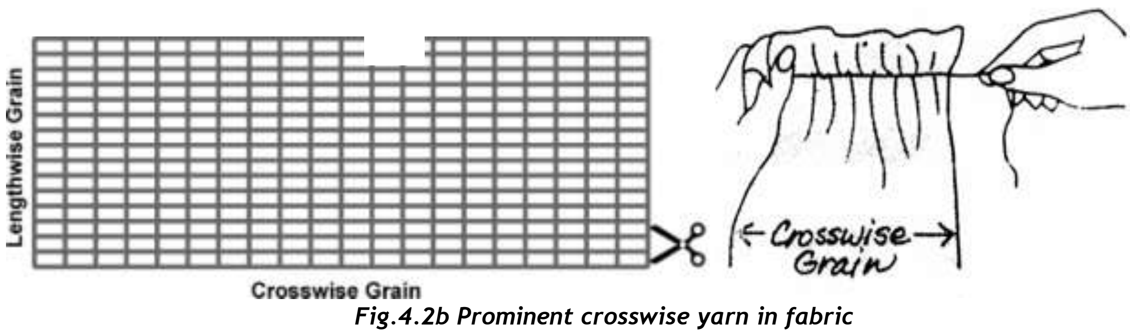


Fig.4.2b Prominent crosswise yarn in fabric
(Source: Developed by the Contributor and http://www.cwu.edu/~robinsos/ppages/resources/costxt/costxt_7.htm)

(b) Fabrics that are firmly woven can be torn with a quick jerk (Fig. 4.2d) straight across the fabric after clipping into the selvedge. (Fig. 4.2c)



(c) *(d)*

Fig.4.2c Clipping the selvedge, Fig.4.2d Torn Fabric edge

(Source: http://www.american-doll-outfitters.com/grain_line.html)

(c) For sheer fabrics and fabrics that fray, Clip the selvedge and gently pull one crosswise yarn so that it causes a puckered line. Now cut carefully along this puckered line as far as you can follow it clearly. Now grasp the yarn (or the one next to it) again and repeat the pulling and cutting, across the full width of the fabric. (see fig.4.2e).

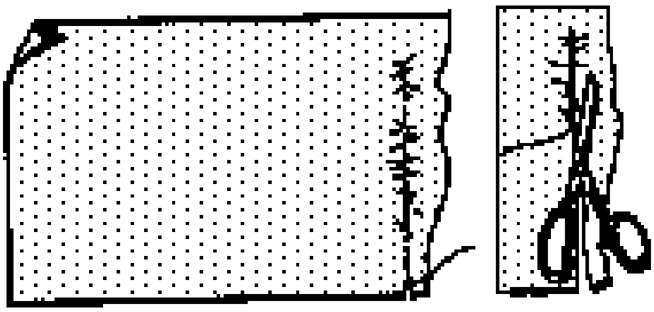


Fig.4.2e Puckered line on pulling crosswise yarn

(Source: http://www.cwu.edu/~robinsos/ppages/resources/costxt/costxt_7.htm)

Checking and Straightening the Fabric Grain

After the ends have been straightened, fold the fabric in half lengthwise, matching the selvedge accurately, and place it on a table top as shown with the selvedges exactly in line with the long edge of the table and the crosswise ends falling close to the short edge of the table, if the crosswise ends match evenly and are parallel to the short edge of the table, it is clear that the crosswise ends are at right angles to the selvedges and fabric is grain perfect (Fig.4.2f).



Fig.4.2f Checking and straightening the fabric grain
(Source: Developed by the Contributor)

If the cross wise ends do not match evenly and / or are not parallel to the short edge of the table, it shows that the crosswise ends are not at right angles to the selvedges. Such a fabric is off grain and need straightening or restoring of right angled structure (Fig.4.2g).



Fig.4.2g
Source: Developed by the Contributor

Methods of straitening fabric grain: Important methods used for straightening fabric grain are the following:

(a) Stretching method: The simplest method of marking a fabric grain perfect is by straitening it. Open up the fabric, keep it near the corner of a table and pull it on the true bias in the correct direction as shown in the fig4.2 h. After pulling for some time, fold the fabric and check for grain perfectness. This process may have to be repeated several times.



Fig.4.2h Stretching method
(Source: http://www.cwu.edu/~robinsos/ppages/resources/costxt/costxt_7.htm)

(b) Steam press method: If the above mentioned method does not work, clip the selvedge on intervals, sprinkle water on the fabric and press with a hot iron in the appropriate direction till the fabric becomes grain perfect. (Fig.4.2i)

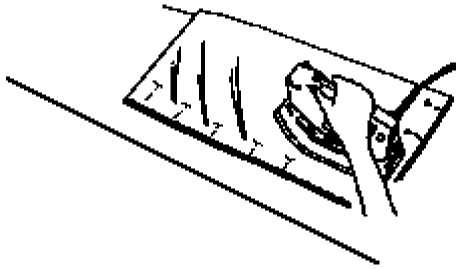


Fig 4.2i Steam press method
(Source: http://www.cwu.edu/~robinsos/ppages/resources/costxt/costxt_7.htm)

(c) Immersion method: This is most effective method for straightening washable fabrics. Fold the fabric lengthwise, tack the selvedges together, immerse it in water until it is completely wet, and then squeeze out excess water. Hang up the fabric till it is half dry. Now place it near the corner of a table and carry out the straighten process to make it grain perfect. (Keep paper or cloth underneath to prevent the fabric from getting soiled or stained from the wooden table –top). After straightening, keep it on a flat surface and dry. When dry, press with an iron and remove the taking stitches along the edges.

Note: Fabric grain can be straightened by pulling the fabric in the bias direction only if the fabric has been sized with a removable substance like starch. Resin treated fabrics which are finished off grain will not straighten by pulling and hence one should disregard grain in these fabrics.

Shrinking Fabrics

Cotton fabrics, especially those with the low thread counts which are not sanforised of preshrunk must be shrunk before cutting. Fabrics which have to be shrinked can be made grain perfect at the same time by following the immersion method. (Fig.4.2j)

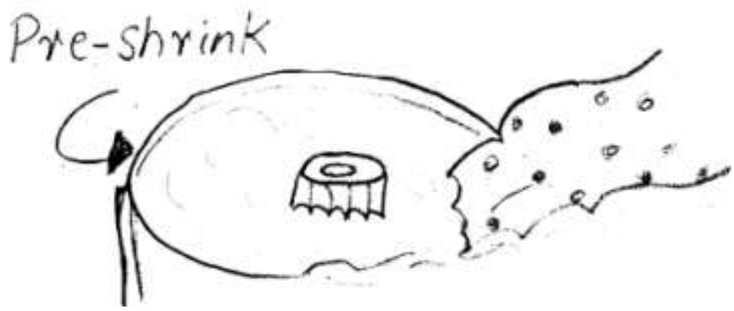


Fig.4.2j Shrinking fabrics
Source: Developed by the contributor

Pressing the Fabric

During the prewashing process it is likely the fabric has become at least somewhat wrinkled. It is not necessary to iron the fabric until it has a completely smooth surface, at least one should need to remove the major wrinkles. Failing to do so can cause the fabric not to lay flat during cutting, leading to distorted pattern pieces being cut.

Exercise

Assignments

Collect pictures from internet for off printed fabrics and paste it in the file.

Assessment

A) Fill in the Blanks:
- A fabric in which the crosswise yarn run at right angles is………………..
- ………………..is compactly worn and is about half an inch wide.
- Sprinkling water on fabric and pressing with hot iron, this method known as……………………..
- Prominent crosswise can be cut………………….along the visible crosswise yarn.

B) Answer the following questions:
1. Explain grain line.
2. Explain the types of grain line.

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A
(a) Explained the methods of straightening the fabric grain.
(b) Explained the importance of grain line in cutting and garment construction.

Part B

Discussed in class the following:

(a) The steps of preparing the fabric for cutting.

(b) The types of grain line.

Part C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	**Yes**	**No**
Explain the importance of grain line in cutting and garment construction		
State the steps of preparing the fabric for cutting.		
Describe the types of grain line.		

Session 3: Layout for Baby Frock and Bloomer

Relevant Knowledge

FABRIC LAYOUT

It is essential to gain knowledge about different types of pattern layout before proceeding for the layout of baby frock and bloomer.

Rules to be Remembered in Pattern Layout

1. Press the fabric as well as the pattern pieces flat before laying the pattern on the fabric.
2. Use a large table or any hard flat surface for accommodating the work.
3. If an open layout is used, place the fabric right side up on the table. For all other layouts, fold the fabric right sides facing and wrong sides out.
4. Decide on the best way to fold the cloth. This will depend on the width of the cloth, width of the pattern pieces, the type of cloth and design of the garment.
5. Make a trial layout by keeping weights or two pins per pattern, to make sure that cloth will be sufficient.
6. Fold lines on the patterns must be kept on folded edges of fabric.
7. Leave enough space between patterns for cutting outward notches and marking seam allowances. Also make sure that there is enough material left for cutting out belts, facings, pockets, etc. for which you may not have made paper patterns.
8. Pin patterns to the fabric firmly.
9. Take care to use special layouts for asymmetric designs and for fabrics with designs striped and checked designs, designs going in one direction and fabrics with nap and pile as discussed under the heading special layouts.

Methods of Layout

a) Lengthwise centre fold (Fig.4.3a): Here the fabric is folded down the middle parallel to the selvedges so that the selvedges come together. This is the most frequently used fold. The layout for a simple frock on this type of fold is illustrated in the figure.

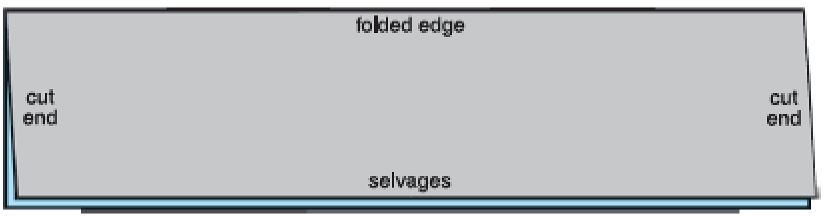


Fig.4.3a Lengthwise centre fold
(Source: http://www.g-w.com/pdf/sampchap/9781605259970_ch08.pdf)

b) Off centre lengthwise fold (Fig.4.3b): This is used when narrow pieces have to be cut on fold. Here the fabric is folded down the middle parallel to the selvedge.

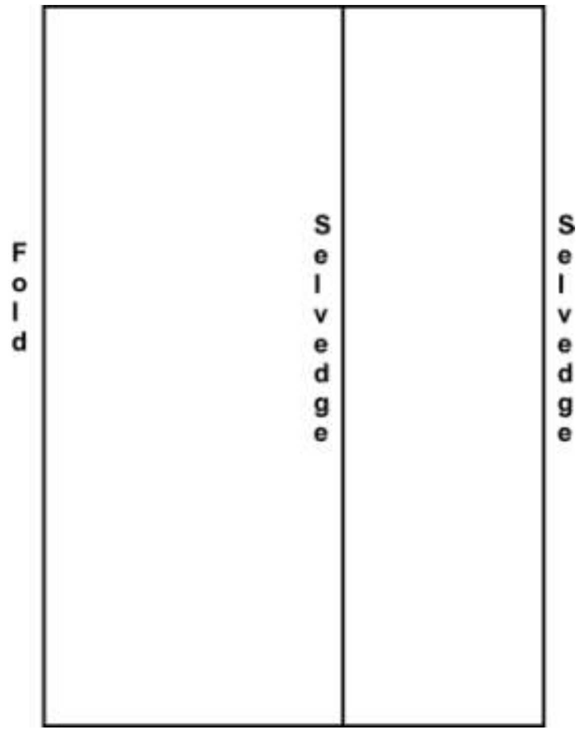


Fig.4.3b Off centre lengthwise fold
(Source: Developed by the Contributor)

c) Crosswise centre fold (Fig.4.3c): This is suitable for materials that are too narrow to accommodate the width of pattern pieces when folded lengthwise. Here the fabric is folded down the middle perpendicular to the selvedge or crosswise.

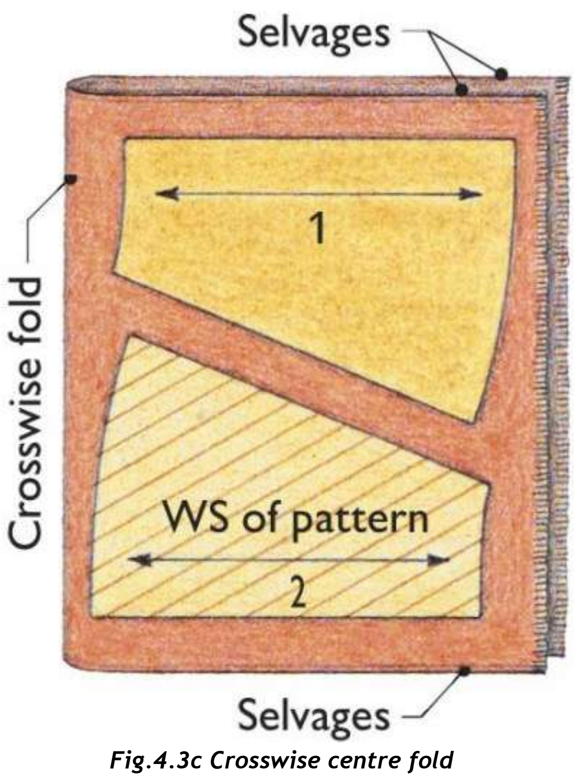


Fig.4.3c Crosswise centre fold
(Source: http://www.threadsmagazine.com/assets/uploads/posts/4968/81-pattern-layouts-02_xl.jpg)

d) Off centre crosswise fold (Fig.4.3d): When only a part of the material is required to cut pattern pieces that are too wide for lengthwise fold layout, this type of fold is used. Here the fabric is folded down perpendicular to the selvedge or crosswise as required.

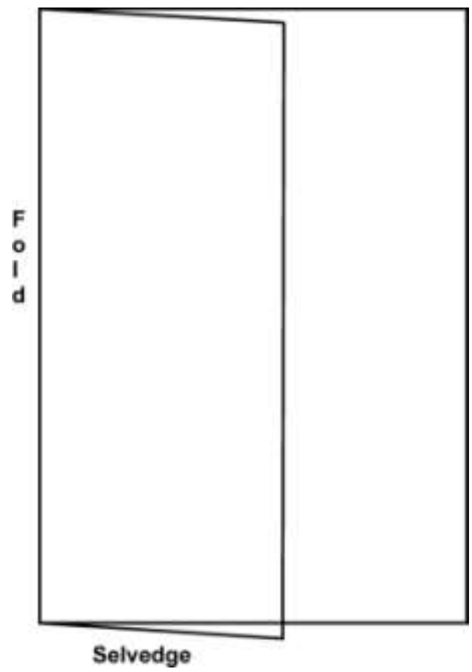


Fig.4.3d Off Centre Crosswise Fold
(Source: Developed by the Contributor)

e) Double fold (Fig.4.3e): This is used when many pattern pieces that are not too wide must be cut on fold. For garments with no opening for front and back sections, this type of fold can be used provided the cloth is wide enough to accommodate the patterns when folded this way. Here the fabric is folded in such a way that the selvedges meet at the center.

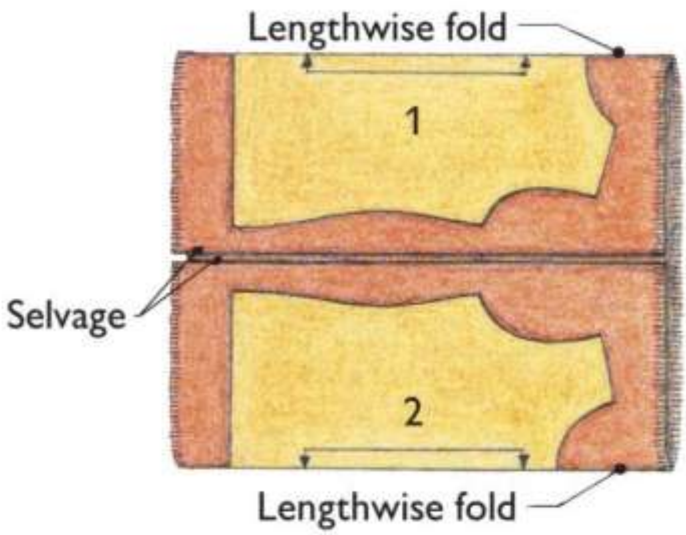


Fig.4.3e Double fold
(Source: http://www.threadsmagazine.com/assets/uploads/posts/4968/81-pattern-layouts-03_xl.jpg)

f) Combination fold (Fig.4.3f): Here, lengthwise fold and crosswise fold are combined.

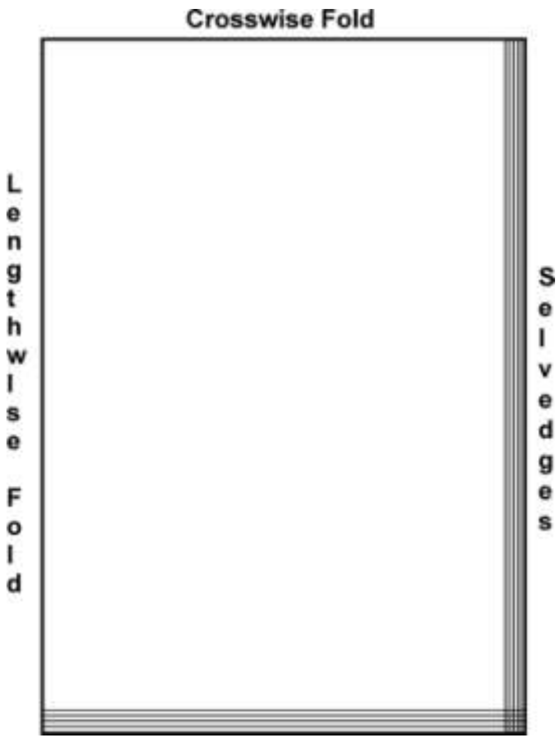


Fig.4.3f Combination fold
(Source: Developed by the Contributor)

g) Open layout (Fig.4.3g)**:** In this type of layout, the fabric is not folded at all. This is used especially for designs which require right and left halves to be cut separately.

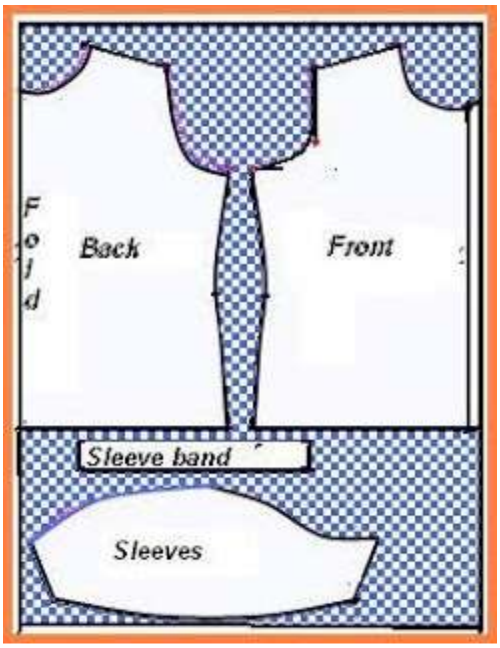


*Fig.**4.3g Open layout***
***Source:** http://3.bp.blogspot.com/_SzUI3__TLxg/SvQDI1I5LwI/AAAAAAAAAww/jzHBECK58rs/s320/blouse+parts+layout.jpg*

Special Layouts

a) Fabrics with lengthwise striped design (Fig.4.4a,a1,b,b1): While cutting fabric with bold stripes, adjust the position of the pattern so that one of the prominent lines falls along the centre back of the garment and the remaining strips are identical on the two sides of the fold (See Fig.4.4a1). Finished appearance of the garment is shown in Fig.4.4a.

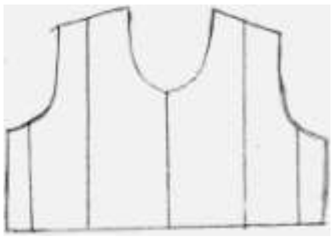


Fig.4.4a

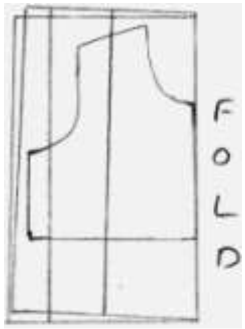


Fig.4.4a1

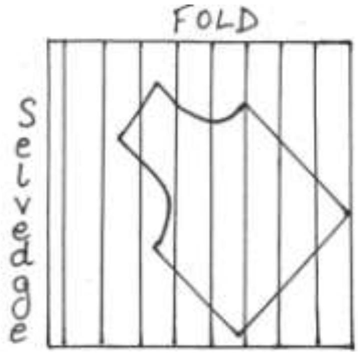


Fig.4.4b

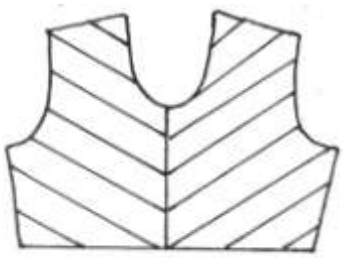


Fig.4.4b1

Fig.4.4a, a1 and Fig.4.4b, b1: Fabrics with lengthwise striped design

(Source: Developed by the Contributor)

Striped material can also be cut on the bias (See Fig.4.4b1) forming a chevron design (in the shape of the letter V) at the centre front or the centre back seam or opening as shown in Fig.4.4b.

b) Fabrics with bold designs such as plaids, and crosswise stripes (Fig.4.4c,c1): Match plaids and stripes so that they form continuous lines across seam openings (see Fig.4.4c) or meet at equal angles. When you fold such fabrics to keep the pattern pieces, make sure that the stripes are matching exactly on both layers of fabric, as in Fig.4.4c1.

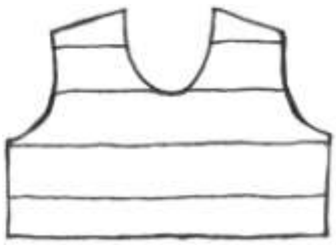


Fig.4.4c

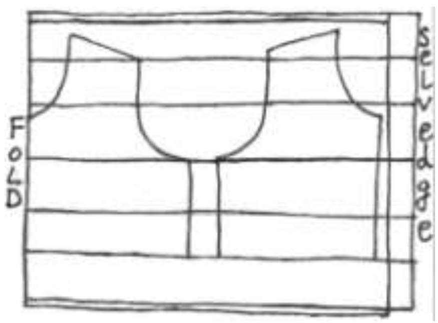


Fig.4.4c1

Fig.4.4(c,c1) Fabrics with bold designs

Source: Developed by the Contributor

If the print is large and spaced or with sweeping curves, drape the fabric on the body and look in the mirror to see, where and how the highlighting part of the design should be placed.

c) Asymmetric designs (Fig.4.4d, d1)**:** These designs call for right and left sides to be cut separately from a single layer of fabric, taking care to see that not to cut both the sections for the same side. If the material has no right and wrong side, this problem will not arise. Fig.4.4d shows a blouse with asymmetric design. Its layout is displayed in Fig.4.4d1.

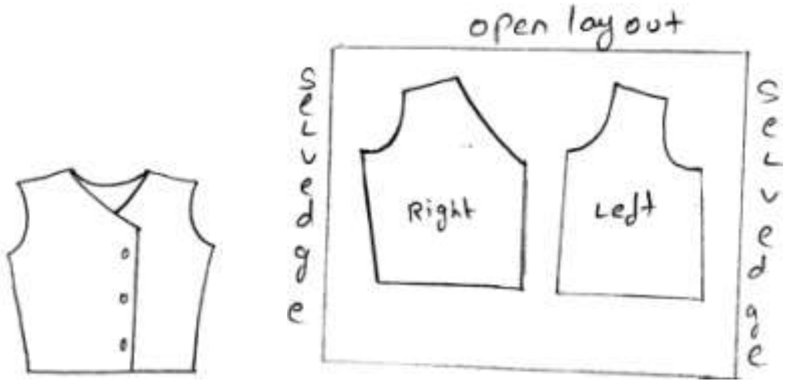


Fig.4.4d *Fig.4.4d1*

Fig.4.4(d,d1) Asymmetric designs

(Source: Developed by the Contributor)

d) Fabrics with one way design (Fig.4.4e,e1)**:** When cutting these fabrics, one must take care to see that all the pattern pieces are arranged in the same correct direction as shown in Fig.4.4e1. The finished appearance will be like in Fig.4.4e. Otherwise the print will look upside down on sections which have been placed wrongly.

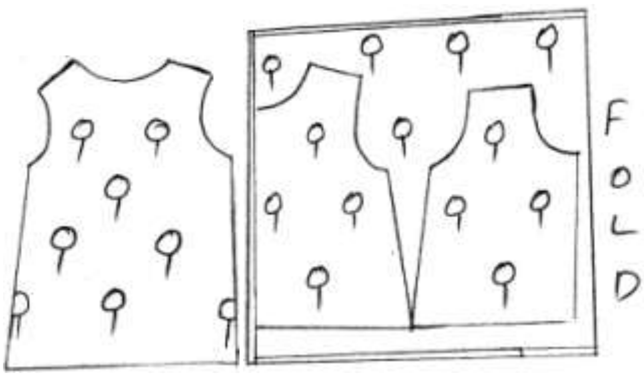


Fig.4.4e *Fig.4.4e1*

Fig.4.4(e,e1) Fabrics with one way design

(Source: Developed by the Contributor)

e) Fabrics with nap and pile have to be treated like fabrics with one way design.

FABRIC LAYOUT, MARKING AND CUTTING OF BABY FROCK

Fabric Layout of Baby Frock

Fabric layout or pattern placement for baby frock is shown below in fig.4.5. Here lengthwise fabric fold is made. The layout for a frock with bodice and gathered skirt is shown below. The pattern pieces are numbered as follows.

1. Back Bodice   2. Front Bodice
3. Front Skirt   4. Back Skirt

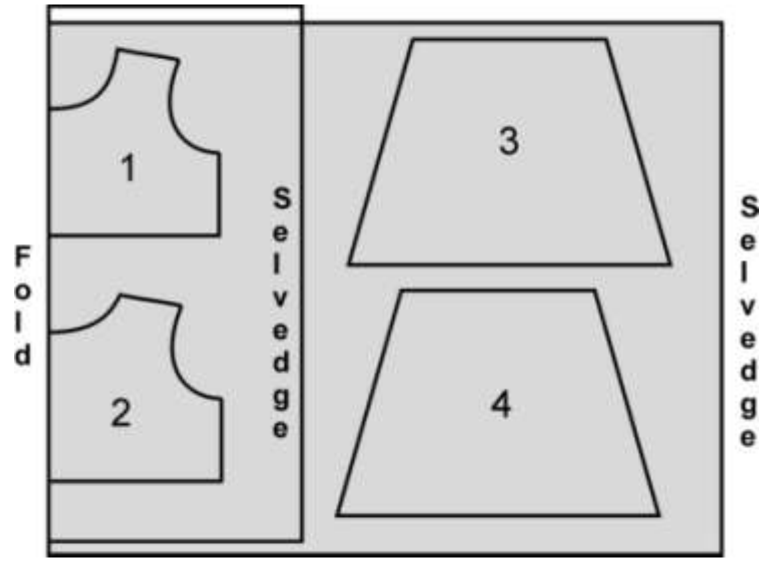


Fig.4.5 Fabric Layout of Baby Frock
(Source: Developed by the Contributor)

Fabric Layout of Bloomer

Fabric layout or pattern placement for Bloomer is shown below in Fig. 4.6 .Here lengthwise fabric fold is made. In the Fig.4.6.QR is the lengthwise fold on cloth and PS is the selvedge. Keep the paper pattern on the folded cloth with the straight grain line GD parallel to the selvedge.

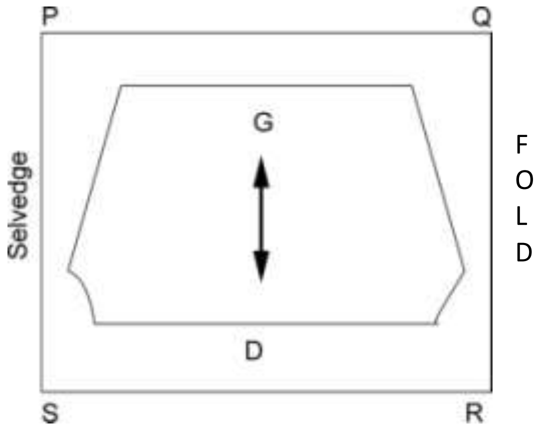


Fig.4.6 Fabric Layout of Bloomer
(Source: Developed by the Contributor)

Note: *Drafting of sleeve has been given in Unit-3. Thus, sleeve may also be constructed.*

Fabric Marking and Cutting of Baby Frock and Bloomer

Fabric Marking (Fig.4.7, 4.8):

1. Lay out the pieces along the grain.
2. Secure the pattern, either with weights or pins .Weights do not ripple the pattern paper like pins do.
3. Using fabric marking tool trace around the pieces.
4. Mark all notches.
5. Now transfer darts and other details on the fabric by using carbon and tracing wheel or tailors chalk or any of the method seeing to the nature of fabric.
6. Now the fabric is ready to cut.

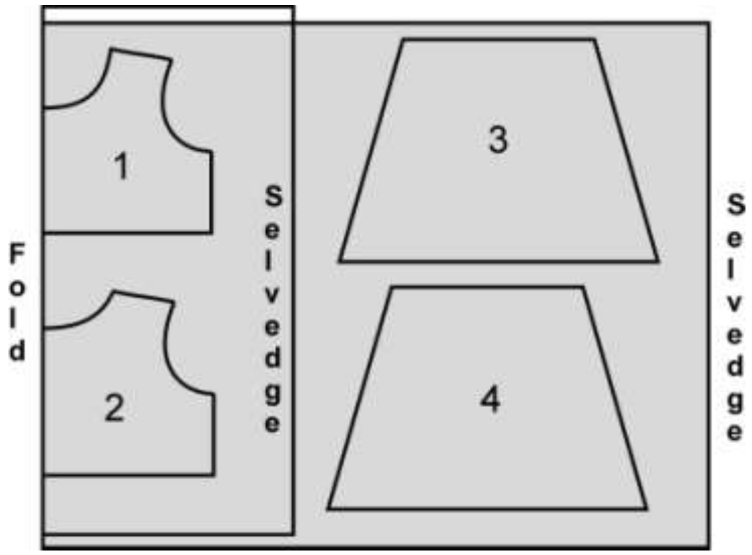


Fig.4.7 Fabric Marking of Baby Frock

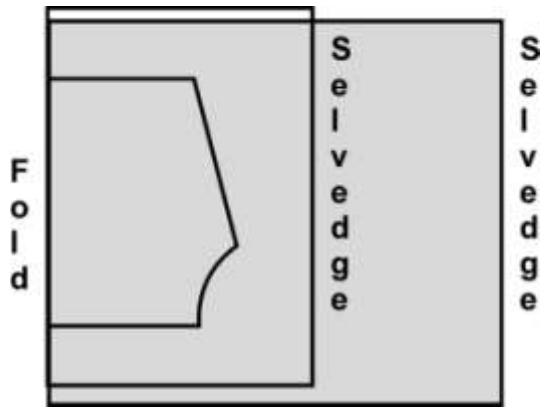


Fig.4.8 Fabric Marking of bloomer

Fabric Cutting (Fig.4.9):

Fabric cutting scissors can be used to cut out the pattern pieces. By taking care to align and cut your pieces accurately, will avoid mistakes later on during sewing. Cut away the tracing line meant for cutting.

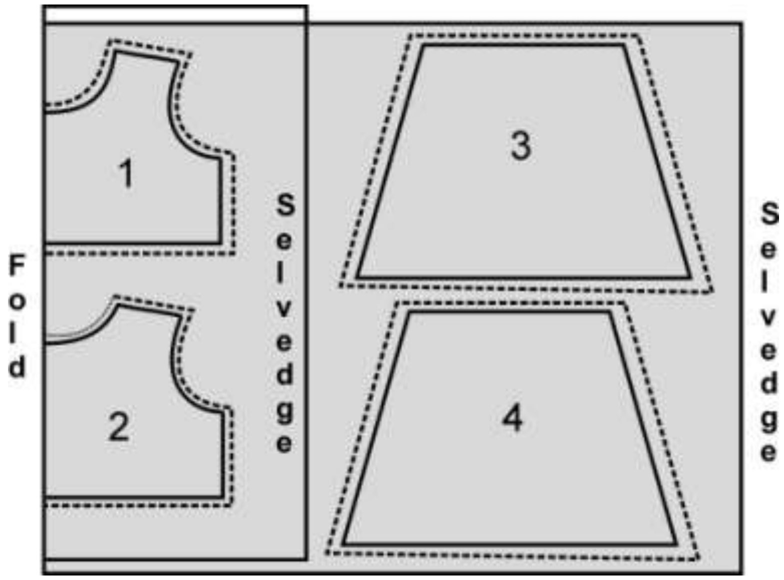


Fig.4.9a

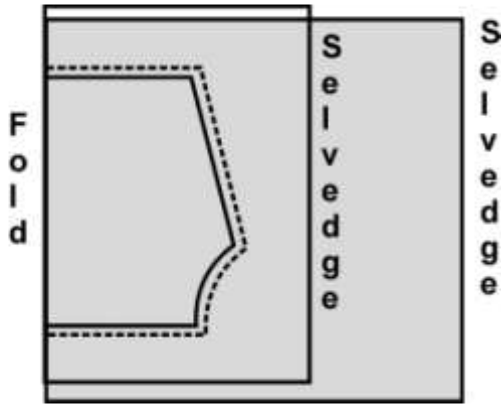


Fig.4.9b

Fig.4.9a,b Fabric cutting for baby frock and bloomer

(Source:http://www.blueprintsforsewing.com/blog/lwjhhzf59ye4469q3ye1h37rwa6b3l)

Exercise

Assignments

Collect pictures from internet of any three types of fabric layout and paste it in the file.

Assessment

A. Answer the following questions:
1. Explain fabric layout.
2. Enlist any two types of special layouts for fabric and explain the same?

B. Fill in the Blanks:
1. Fold lines of the patterns must be kept on ------------------- edges of fabric.
2. …………………….. layout could be used for asymmetrical designs.

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A

(a) Explained rules to be remembered in pattern layout
(b) Explained the methods of fabric layout
(c) Explained the importance of special layout with examples.
(d) Explained the method of marking and cutting for baby frock and Bloomer.

Part B

Discussed in class the following:

(a) The method of marking and cutting for baby frock
(b) The method of marking and cutting for Bloomer
(c) The rules and methods of pattern layout

Part C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	**Yes**	**No**
State the rules and methods of pattern layout		
Marking and cutting for baby frock		
Marking and cutting for Bloomer		

Session 4: Garment Construction for Baby Frock and Bloomer

Relevant Knowledge

GARMENT CONSTRUCTION FOR BABY FROCK

Cut both the frock panels along the outer line meant for cutting (Fig.4.10).

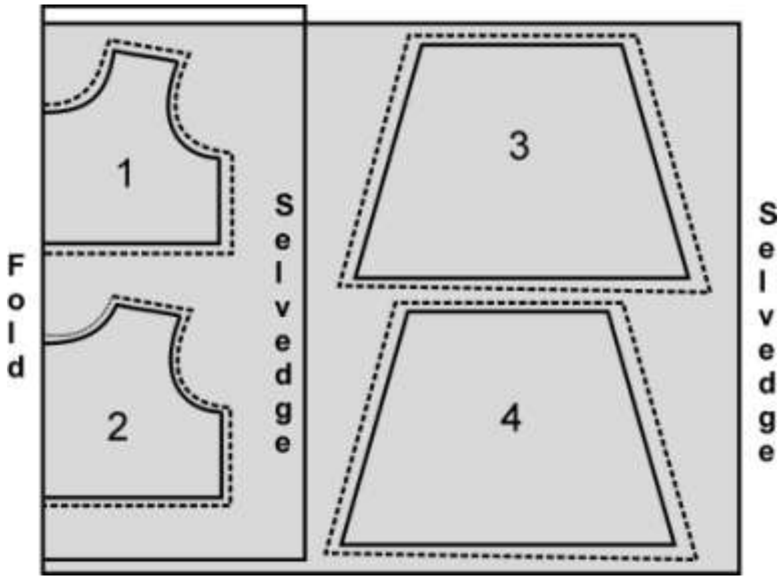
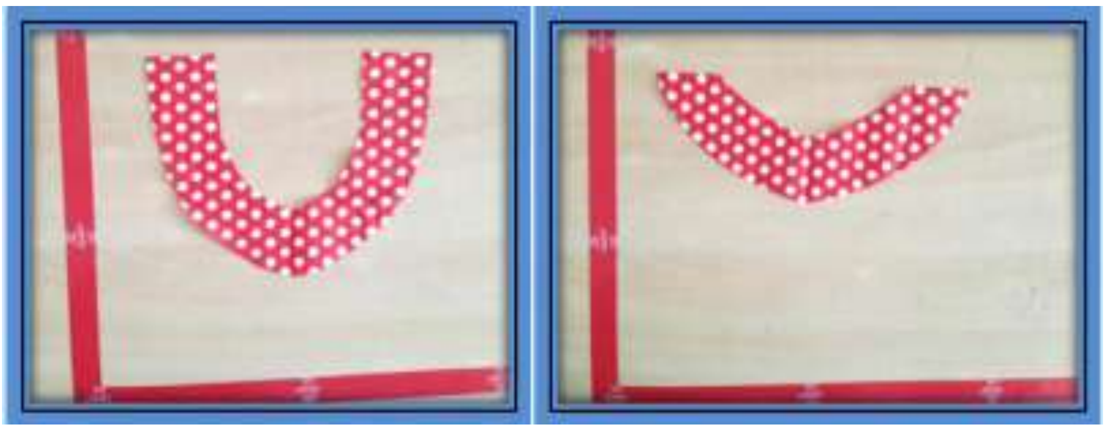


Fig.4.10 Fabric cutting
(Source: Developed by the Contributor)

Neckline Finish:

- The neckline can be finished either with facing or binding. Here the frock is finished using shaped facing.
- The shaped facing is cut to the exact shape of the garment edge to which it is applied leaving 1 &1/2” all around and cut as shown in Fig.4.11(a,b).



(a) Facing for front *(b) Facing for back*
Fig.4.11(a,b) Facing for front and back neck
(Source: http://www.instructables.com/id/Sew-a-frock-for-a-6-months-old-girl/)

- Place the Facing for front and back neck respectively on the neck .Make sure that the right sides of both the fabric are facing each other. Stitch the facing and frock panel together for front and back necklines. Fig.4.12 (a,b)



Fig.4.12 (a,b) Attachment of Facing (Front and Back)
(Source: http://www.instructables.com/id/Sew-a-frock-for-a-6-months-old-girl/)

2. The pattern pieces for front and back should be interfaced. Match them up at the shoulder seams, pin together and stitch (Fig.4.13).



Fig4.13 Joining of Shoulders
(Source: http://www.instructables.com/id/Sew-a-frock-for-a-6-months-old-girl/)

3. The armhole can be finished either with facing or binding.(Fig.4.14 a,b)

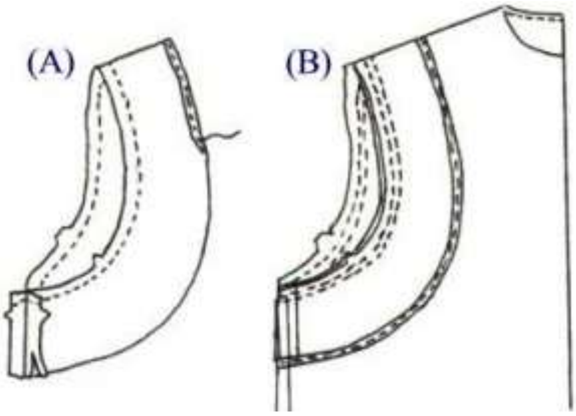


Fig.4.14 (a,b) Armhole Finish
(Source: http://www.instructables.com/id/Sew-a-frock-for-a-6-months-old-girl/)

4. Attach placket at the back side of the frock.(fig. 4.15)



Fig.4.15 Placket Finish

(Source: http://www.instructables.com/id/Sew-a-frock-for-a-6-months-old-girl/)

5. Place both the bodice (right sides facing) and complete by a side seam (Fig. 4.16)



Fig.4.16 Side seam finish

(Source: http://www.instructables.com/id/Sew-a-frock-for-a-6-months-old-girl/)

6. *Skirt Finishing:* Stitch the two skirt piece together along the sides after forming gathers. (Fig.4.17)



(Fig.4.17 Finishing of Skirt)

(Source: http://www.instructables.com/id/Sew-a-frock-for-a-6-months-old-girl/)

- Complete skirt by placing together the upper body and lower skirt and stitch them together (Fig.4.18).



Fig.4.18 Joining Bodice with Skirt
Source: http://www.instructables.com/id/Sew-a-frock-for-a-6-months-old-girl/

7. The finished look of Frock (Fig.4.19).



Fig.4.19 Finished Frock
Source: http://blogbyusha.com/2014/07/01/how-to-make-a-simple-frock/

GARMENT CONSTRUCTION FOR BLOOMER

1. Fold your fabric right sides together and place the Bloomer pattern. Cut two pieces from the fabric.(Fig.4.20)



Fig.4.20 Fabric Cutting
***(Source**: http://seekatesew.com/free-pattern-baby-bloomers/)*

2. Place the front and back piece of the bloomer with right sides facing each other and sew the side seams and crotch seam as shown in Fig.4.21.



Fig.4.21 Side Seam Finish
***(Source**: http://seekatesew.com/free-pattern-baby-bloomers/)*

3. Complete the top and leg openings (Fig.4.22,Fig.4.23).



Fig.4.22 Waist Line Finish
***(Source**: http://seekatesew.com/free-pattern-baby-bloomers/)*



Fig.4.23 Bottom Hem Finish
(Source: http://seekatesew.com/free-pattern-baby-bloomers/)

4. Finish the bottom leg and waist by inserting elastic. (Fig.4.24 a,b)





(a) Waist *(b) Bottom Hem*

Fig.4.24 Elastic Insertion
(Source: http://seekatesew.com/free-pattern-baby-bloomers/)

5. The finished look of the Bloomer garment is shown in Fig. 4.25.



Fig. 4.25 Finished Bloomer
Source*: http://seekatesew.com/free-pattern-baby-bloomers/*

Exercise

Assignments

Collect pictures from internet for different frock styles and paste it in the file.

Assessment

A. Answer the following questions:

1. Write the sequence for constructing Bloomer.
2. Write the sequence for constructing Baby Frock.

B. True or False

1. To join the shoulders of Bodice, keep the wrong sides of the fabric facing each other.
2. Elastic insertion should be made after completing the side seams of Bloomer.

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A

(a) Explained garment construction for baby frock
(b) Explained garment construction for bloomer

Part B

Discussed in class the following:
(a) The garment construction for baby frock
(b) The garment construction for bloomer

Part C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	Yes	No
Construction of baby frock		
Construction of bloomer		

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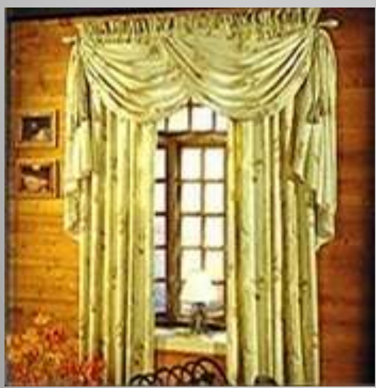
Apparel, Made-ups and Home Furnishing

NSQF Level 2 – Class X

HSA 205-NQ2014 : BASIC HOME FURNISHINGS AND MADE-UPS

Student's Workbook







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Introduction

Home furnishings are fast growing segment in the Textile Industry. More the people long for decorating their surroundings with soothing colors and designs, more the textile manufacturers are increasing the production of interior textiles. Home furnishings refer to the different kinds of linen, furniture, fittings, flooring and the bundle of other accessories used for decorating and beautifying our homes.

Home Furnishings include a wide range of products- Carpets and rugs, Curtains, Table linen, mats and runners, Kitchen linen and other kitchen accessories, Bathroom furnishings, Window Treatments, Hammocks, Bed linen, Bed spreads, Blankets, Pillows and pillow covers, Cushion and cushion covers, Duvets and Duvet covers and many others.

Session 1: Bed Textiles

Relevant Knowledge

Bed textiles are textile materials that are used for beddings. Materials like cotton, silk and polyester are commonly used to prepare bed textiles.

A bed sheet is a flat-woven textile that is used on a bed between the occupant of a bed and the warm blanket above. It is generally a rectangle of broad loomed fabric. Bed sheets have hems at top and bottom. The selvedges or finished edges of the woven sheet as it is made on the loom are used as side seams and thus there is no need for hemming on the sides. Today, the bed sheet comes as part of a set of bed linens that match in color, fabric, and detail and includes the fitted sheet (to cover the mattress), the flat sheet and at least one pillow case.

The bed sheet may be made of a variety of fibres, including linen, cotton, synthetics (often blended with natural fibres such as cotton) and occasionally silk. Bed sheets are made of a wide variety of fabrics. Particularly popular is percale, a closely-woven plain weave of all cotton or cotton-polyester blends that is smooth, cool and comfortable against the skin. In winter season flannel sheets, which are woven with nappy cotton fibres, provides additional warmth. Silky, satiny bed sheets, generally woven of synthetics are a novelty.

REQUIREMENTS OF BEDROOM TEXTILES

A. Physical

One should select the fabrics based on the following factors

- Quick & easy wash ability
- Durability, dryable
- Bending
- Crease resistance
- Resilience
- Anti static
- Anti-pilling
- Drape
- Handle
- Bulkiness
- Smooth Texture

B. Selection of Fabrics

One should select the fabrics based on the following factors

- Style
- Color
- Durability
- Thread Count
- Fade Resisting

- Tailoring
- Form and Fiber.

FABRIC FINISHES

The word “textile” means the complete study of fibres, yarns and fabric. Certain treatments are applied to improve the look and qualities of textile goods. These treatments are called finishes. A finish is a treatment given to a fabric, to change its appearance, handling /touch or performance. Its purpose is to make the fabric more suitable for their end use. There are different types of fabric finishes available for bed textiles. They are as follows:

- **Durable and permanent press**: Little or no ironing, wrinkle free, holds oil stains unless specially treated.
- **Soil release:** Fabric is easily wetted to facilitate detergent action while washing.
- **Water Repellent**: Repels water and water based stains.
- **Oil and stain repellent:** Repels water and oil based stain
- **Crease wrinkle resistant:** Wrinkles less than normal – cotton, linen, rayon
- **Shrinkage control:** Fabric shrinkage limited to 1 %, 2%. No Shrinkage.
- **Flame retardant:** Ignited fabric will self extinguish when source of flame is removed.

TYPES OF FABRIC USED FOR BED TEXTILES

1. Cotton

Cotton is the most popular fabric used to make sheets and other bedding, for good reasons. It’s durable, breathable, soft, easy to care for and generally quite affordable. There are several different types of cotton. They are as follows.

- *Egyptian cotton*
- *Pima cotton*
- *Upland cotton*
- *Combed cotton*
- *Flannel*
- *Italian linen*
- *Muslin*
- Percale
- Sateen
- Satin

- ***Egyptian cotton*** is the most luxurious variety, super-soft, high-quality bed sheets. Egyptian cotton is a type of long-staple cotton grown only in Egypt. It enjoys worldwide renown as the strongest, most beautiful and lustrous cotton produced and its extraordinary quality is due to the long growing season in that country. Sheets of Egyptian cotton with a high thread count are reputed to be more luxurious than any others. Thread count for Egyptian cotton bed sheets is usually 200 and above.
- ***Pima cotton*** is also known for its softness and natural sheen. Medium to extra-long fibres are ideal for bed sheets. This cotton is primarily grown in the southwest of the United States, along with a few other locations. Pima cotton bed sheets have a silky,

soft feeling. Pima is also grown in Australia and Peru. "Supima" is a trademarked name for 100-percent pima cotton, which has been grown in the United States. The term means "superior pima." Pima cotton sheets usually have a thread count of 200 to 300.

- ***Upland cotton*** is native to the America, but now it is the most commonly grown cotton in the world. Its fibres are not as long as Pima or Egyptian cotton, so it's not as soft as those varieties.
- ***Combed cotton*** is cotton which has gone through a process to remove shorter fibres and any impurities in the material, which creates a smooth, soft fabric.
- ***Flannel*** is a blend of cottons. Quality is not measured by thread count, but in ounces of material per square yard of fabric. Four ounces or more per square yard is considered as good-quality flannel. Flannel bed sheets are highly popular for their warmth and are often used in baby bedding.
- ***Italian linen*** is a luxurious fabric made only in Italy from the long-staple cotton that is grown exclusively in Egypt. The lustrous cotton and the processes used in Italy to create the fabric are of such a high quality that bed sheets of this material are truly luxury items.
- ***Muslin*** is a cotton that is rougher yet tougher than others. Muslin is frequently used in children's bedding and printed with shapes or figures. During washing, this fabric tends to "pill" and fade more than other bed sheets. The thread count varies from 128 to 140.
- **Percale** is a combed and close-woven cloth made of either cotton-polyester blends or 100-percent cotton. It is finer and softer than muslin and generally has a thread count of 180 to 200. Because of their polyester blend, percale sheets have a very low wrinkle factor.
- **Sateen** is a weave, not a fibre. It is a certain weave of natural fibres and cotton and should never be confused with silk. Sateen sheets are produced in a unique four-threads-over-one-thread method of weaving, which gives these bed sheets their special luster.
- **Satin** is also a weave, not a fibre. Satin is woven of wool, cottons, acetate, and polyester, silk or other materials. All weaves of satin bed sheets are extremely smooth and sleek.

2. Silk

Silk fibre sheets are known to be more desirable and luxurious than any other sheets. Silk threads are longer than any other because each single filament of the silkworm cocoon, unwound, can reach 1600 feet. This makes silk filament very delicate and extremely strong. Silk fabric is not graded by thread count, but by "momme weight" (fabric is listed with a momme weight of 8mm, It means that 100 yards of the fabric weighs 8 pounds) The standard is a piece of silk that measures 45 inches by 100 yards.

3. Tencel

Tencel is a brand name for fabric made out of eucalyptus tree wood pulp. It's soft, very durable, and naturally antimicrobial. Tencel is generally considered an environmentally friendly fabric, as its production requires less water, energy and chemicals than cotton does.

4. **Polyester**

Polyester is a manmade fibre produced from the same polymers used to make plastic drink bottles. While polyester is inexpensive, it's quite stiff and scratchy when used on its own. Generally, polyester is mixed with cotton, in inexpensive sheet sets.

5. **Bamboo**

While bamboo can be made into fabric, it's typically rather stiff and rough. Most often, what is found labeled as "bamboo" sheets are actually rayon. This means the bamboo pulp went through a chemical process to dissolve the pulp, re-solidify it, and then spin it into thread. This process involves harmful chemicals and is potentially hard on the environment, making bamboo sheets less environmentally friendly than its manufacturers claim. It does produce a very soft, durable and silky fabric, however.

6. **Blends**

There are lots of blended fabrics available, most including some form of cotton. Cotton/polyester is the most common, followed by cotton/bamboo and cotton/rayon. Blended fabrics are usually inexpensive, durable and wrinkle-resistant, making them a good choice for children's bedding.

RAW MATERIAL USED FOR BED SHEETS

Bed sheets can be made up with the following raw material: cotton, linen. It can be made up with any of the following cloths (Fig.5.1):

Cloth	***Raw material***	***Weave***
Cambric	Cotton or wool	Plain
Dimity	Cotton	Plain with cross length wise and cross bar effect
Dotted swiss	Cotton	Plain(ground with swivel , lappet)
Gingham	Cotton	Plain (stripe, check plaids)
Corduroy	Cotton, rayon	Filling pile with plain or twill back.
Crettone	Cotton, linen, rayon	Plain or twill.
Plisse	Cotton, rayon	Plain
Sateen	Cotton, rayon	Sateen
Seersucker	Cotton, rayon	Plain with slack tension

Characteristics for Bed Sheets

- Soft and smooth
- Easy to handle
- Easy care properties
- Durability
- Good dimensional stability




Fig.5.1 Bed Sheets
(Source: www.amazon.in)

RAW MATERIAL USED FOR PILLOWS

- Feathers of goose, rabbit, down, duck, etc. (in cold countries)
- Polyester, cotton (in hot countries)

It can be made up of the following cloths (Fig.5.2):

Cloth	Raw material	Weave
Crettone	Cotton, linen	Plain, twill weaves
Tiking	Cotton, rayon	Twill (12/1, 13/1) satin, dobby & jacquard

Characteristics for a Good Pillow

- It should be softer & lighter
- It should have shape retention
- It should give warmth/coolness




Fig.5.2 Pillow
(Source: www.pinkwhen.com)

BLANKETS AND QUILTS

These are available in different sizes to fit all standard beds.
- Wool blankets are soft, warm, and wear well.
- It should be light weight for comfort (Fig.5.3).

Cloth	Raw material	Weave
Calico	Cotton	Plain
Chinchilla	Cotton, wool	Sateen, twill with extra filling
Flannelette	Cotton	Plain ; twill

Characteristics for Blankets and Quilts

- It should be warm, soft and smooth
- It is heavy and dense



Fig.5.3 Blankets and Quilts
(Source: www.jabong.com)

CONSTRUCTION DETAILS OF BED SHEET

The modern bed sheets with jacquard designs have many variations, including small and large floral patterns co-coordinating themes connecting sheet, pillow covers and curtains. Mostly jacquard weave is used in bed textiles But the small floral designs have survived as the most popular design basis. The 100 percent cotton bed sheets, when used can be given easy care finishing which will not hamper the strength, abrasion resistance and durability found in the untreated fabric.

Normally the Length of the bed sheet is 225 centimeter and width is 150 centimeter. It is a large rectangular piece of cotton cloth with multifunctional finished jacquard fabrics. It is larger than the bed, so it can be tucked under the mattress in order to be kept in place.

CONSTRUCTION DETAILS OF PILLOW COVER

Most pillow covers are made to match the sheet and usually are packed in a pair of two in a set. Pillow covers should be about 25 centimeter longer than the pillow and about five centimeter larger around. The hems should be seven centimeters wide, straight and even. Seams should be firmly and evenly stitched and finished to prevent raveling. Normally the Length and width is 70 centimeter and 45 centimeter respectively.

The paper pattern should be prepared with the given dimension and the fabric was cut accordingly. Rectangular shaped fabric was cut according to the shape of the pillow. Fold and finish the hemline at the backside of pillow cover to have an opening to insert the pillow. The edges were stitched and turned. The fringed edges are attached to all the sides for decorative purpose.

CARE OF BED LINENS

- Pillowcases may be changed more frequently
- Soiled linens should be replaced immediately
- Top sheet may be used to replace bottom sheet
- Do not shake linen.

- Soiled linen placed in covered linen hamper after removal from bed.

Exercise

Assignment

1. Collect photographs of various types of bed sheets and prepare a chart.
2. Collect photographs of various types of pillow and pillow covers, and prepare a chart.
3. Collect photographs of various bed textiles and prepare a chart.

Assessment

Answer the following questions:

1. Define bed sheets.
2. Explain various raw materials used for bed sheets and pillow covers.
3. What raw materials are used for quills and blankets?

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A

(a) Stated various types of cotton.
(b) Explained raw materials used for bed sheets.

Part B

Discussed in class the following:
(a) Explained different types of fabric finishes.
(b) Explained construction details of bed sheets and pillow covers.
(c) Explained requirements of bedroom textiles.
(d) Explained types of fabrics used for bed sheets, pillow covers and blankets.

Part C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	Yes	No
Explain various types of fabrics used for bed textiles.		
Explain characteristics of bed textiles.		

Session 2: Window Textiles

Relevant Knowledge

Window textiles may include curtains, drapes, blinds etc. This is probably the widest area of fabric development in home textiles. Mostly cotton, flax, wool, silk, acrylic, etc. are used for the purpose. Of late flame retardant curtains using modacrylic fibre, viscose, PVC etc. have also gained popularity. Blinds are opaque window textiles. Some blinds allow transmission of a little light into the room whereas the others usually made of cotton fabric, known as black out material, give 100 percent opacity.

Curtains keep out the light, keep in the warmth and add privacy but the very fact that they come in many types of fabric, designs and textures makes them one of the simplest way of redesigning a room. Curtains help to provide a soft warm environment as well as creating color, pattern and texture for the home window treatment.

Windows dressing is essential to enhance or obscure the shape of the window and improve the style and décor of the window and room. It provides privacy and thermal insulation, controls light, and helps in sound reduction. This can be achieved by the use of curtains. The line, colour, pattern and texture contribute to character and atmosphere of the room. Selection of fibre should be done with regard to its resistance to fading, abrasion, drape, dimensional stability and flame resistance. The exposure to sunlight and airborne soiling should be considered. Lining of curtains helps to reduce damage of fading and rotting. Curtains are subjected to abrasion by being pulled and drawn, brush against, rub along a floor or window frames and being laundered. The abrasion resistance depends upon the type of fibre selected and fabric construction. Loosely woven material tends to loose drape and constant hand drawing may cause loss of shape.

WINDOW TEXTILES REQUIREMENTS

- It should have good Sun filter capacity.
- Easy to wash (similar washing reaction for all dyes used)
- Mostly Printed designs are preferred. (natural designs)
- Solid color dyes are used.
- Reflective textiles (Reduce solar gain prevent sun glare)

Fibre for Curtains

Natural fibres like cotton, wool and linen have high tenacity and wear well. They do not catch fire fast and provide good thermal insulation. Loosely woven fabrics do not drape well and these fibres may become yellow due to oxidation. Synthetic fibres like nylon and polyester are easy to maintain and wear well. They have good abrasion resistance but may be highly flammable (Fig.5.4). A flame retardant finish is desirable. Other fibres like glass fibre, acrylic and blends are also popular. Plastic is used for shower curtains.

- Polyester
- Flax
- Viscose
- Cotton

- Silk
- Acetate
- Jute
- Hemp
- Glass
- Modacrilics

Cloth Used for Curtains

Cloth	Raw material	Weave
Brocade	Cotton (ground), Viscose (pattern)	Jacquard, dobby
Chenille	Cotton	Plain
Organdy	Cotton	Plain with swivel, lappet
Lawn	Cotton	Plain
Gingham	Cotton	Plain(stripes, checks, plaids)
Point de sprit	Cotton, silk	Leno, gauze
Voile	Cotton, wool	Plain loosely woven



Fig.5.4 Curtains
(Source: www.dreamcurtaindesigns.com)

TYPES OF FINISHES USED FOR CURTAINS

1. Uncoated Fabrics

An uncoated fabric provides a higher level of heat insulation and light absorption (approximately 50% - 60% sun blockage). It is the composition of polyester and/or cotton (tightly woven fabric). Despite being thick in nature, an uncoated fabric does not absorb all the lights that fall on it. Hence, one still is able to enjoy an adequate amount of sunlight during the day.

2. Coated Fabrics

The most economical way to put curtains on any window is with thermal lining already applied to the fabric. Most thermal lined fabrics are 100% block out so an additional lining is not required (reduced making costs). This area of curtain fabrics has progressed dramatically in the last few years - great fabrics and colours already lined.

3. **Finishing**

- Fire – retardant finishes
- Anti – shrink treatment

Earlier cotton, silk and polyester are used for window textiles. Now modern trends of fabrics are used they are as follows:

TYPES OF FABRICS USED FOR WINDOW TEXTILES

Burnout

A technique used on many kinds of fabric but in general is a chemical solution applied to destroy a portion of the fabric, while leaving other areas intact. An example would be burning a floral pattern out of the pile in a velvet piece while leaving the backing fabric intact. Burnout sheers are extremely popular, as they allow light of filter through at various intensities.
Calico: Used primarily for simple curtains, this cotton fabric boasts small floral patterns (typically) on a contrasting background.
Canvas: A sturdy, plain weave cloth, this cotton or cotton/polyester cloth offers a stiff and tailored, yet casual look. Best for stationary drapery panels. Duck or sailcloth is considered (lighter weight canvas) when a little draping is required.
Chintz: This cotton cloth offers bright colors, patterns and floral motifs. Consider having this fabric lined if used in a window that receives direct sunlight, as the fabric will weaken and fade over time. Sometimes chintz is finished with a slight glaze to offer a polished look. It was very popular in the 18th century, though it is still used frequently until today due to its lower cost and bright patterns, for curtains and draperies.
Damask: A delicate lightweight cotton fabric best suited for curtains. Small raised dots printed on either side of the fabric are the identifying detail. Most often they are woven into fabric; they can now be found applied to the surface.
Gingham: Usually seen in a plaid or checked pattern, gingham is a plain weave cotton fabric used most often for café curtains and very light draperies such as a kitchen.
Jacquard: Refers to a type of weave. The jacquard loom was invented in France 1804 by Joseph Jacquard. Brocade, damask and tapestry are some of the fabric manufactured with a jacquard attachment.
Lace: A light open work of cotton fabric typically used for sheers or curtains, its delicate mesh background consists of openwork designs.
Linen: Stronger and glossier than cotton, linen fibres are obtained from the interior of the woody stem of the flax plant. It is strong but not pliable. It will wrinkle readily and is somewhat stiff. However, it's tough, textured beauty makes it an interesting look at the window in curtains and drapery form, excellent for sun resistance.
Moiré: Meaning watered (French) this silk, rayon, cotton or acetate fabric has a distinctive wavy pattern on the surface that reflects light in the same way light reflects off water.
Muslin: For casual curtains and draperies, cotton muslin can be fine to coarsely woven. Typically used a liner fabric, but has been seen as the primary material.
Nylon: Perfect for sheers, nylon is durable, washable and inexpensive.

Organza (Organdy): This lightweight crisp, sheer cotton fabric is finished with a starch that will wash out. Organza takes a variety of finishes and embellishments including bleaching, dying, and frosting, for curtains and drapes.
Satin: With a matte back and a lustrous front, satin is available in many colors, weights and degrees of stiffness.
Taffeta: A crisp fabric known best for its wonderful "rustle" sound, taffeta is a lustrous plain weave fabric usually made from synthetic fibre but sometimes made from silk, great for draperies.
Tapestry: Heavy and deliciously dense, tapestry is often hand woven and features elaborate motifs such as pictorials, floral and historical scenes.
Toile: French fabric or cloth, toile is best known as Toile de Jouy, a finely printed design resembling a pen and ink drawing. Found primarily on cotton fabric, toile de joeys depicts romantic, idyllic scenes of pastoral countryside's, floral and historical motifs, great for country curtains and drapes.
Velvet: Plain and figured velvets are beautiful and soft, and best employed as drapery fabric. A medium weight cut pile fabric typically constructed of silk, rayon, cotton or synthetics, its high luster and smooth hand create beautiful, graceful folds of fabric. They are Crease resistant and fairly inexpensive, velvet wears well.
Voile: A lightweight sheer fabric, cotton (also wool) voile is plain and loosely woven. Perfect for curtains or drapes, it gathers and drapes well.

TYPES OF CURTAINS

Glass curtains

These are made of sheer fabrics of simple straight-line covering the entire window area with draperies. (Fig.5.5)



Fig.5.5 Glass curtains
(Source: www. goodhousekeeping.com)

Back curtains

These are made of sheer fabrics and lightweight material with decorative ruffles. They are fixed on the frame or wall by special fixtures. (Fig.5.6)



Fig.5.6 Back curtains
(Source: www. goodhousekeeping.com)

Criss Cross Curtains

Wide panels are mounted on walls so that they overlap on the top and are tied back. (Fig.5.7)



Fig.5.7 Criss cross curtains
(Source: www. goodhousekeeping.com)

Café Curtains

Short curtains that cover the portion of a window often hung on decorative rods by means of rings. (Fig.5.8)



Fig.5.8 Café curtains
(Source: www. goodhousekeeping.com)

Cottage Curtains

These are combination of café and back curtains. (Fig.5.9)



Fig.5.9 Cottage curtains
(Source: www. goodhousekeeping.com*)*

Tier Curtains

Two or more horizontal rows of short curtains, which are mounted on rods so that they overlap. (Fig.5.10)



Fig.5.10 Tier curtains
(Source: www. goodhousekeeping.com*)*

Vertical Draw Curtain

These are mounted on traverse tracks so that they can be drawn open. (Fig.5.11)



Fig.5.11 Vertical draw curtain
(Source: www. goodhousekeeping.com*)*

Vertical Drop Curtain

These are curtains, which move up and down and are found in theatres and cinema halls. (Fig.5.12)



Fig.5.12 Vertical drop curtain
(Source: www. goodhousekeeping.com*)*

Swag and Tail Curtains

These are heading at the top of the curtains and form an integral part of the styling. Curtains are fixed to the track by rings or hook and drop to the floor or windowsill. The fabric for the curtain should be a large piece hanging in folds with the entire pattern visible. It is better to avoid fabrics with white background in large establishments. The general width of the material may be 90 cms, 120 cms, 150 cms or more. The curtain width should be a minimum of one and half times the track width. Lining the curtain helps to protect from dirt or sunlight and provides good drape. Silk fabrics are expensive and usually used in luxury establishments in public areas and suites. Brocades, damasks, velvet's and a variety of weaves may be used. For the bedroom, a lighter material like cotton, linen, chintz, satin etc may be used. In bathrooms, a heavy window does not require curtains but nylon, plastic and glass fibre material are often used for shower curtains. Plastics may easily dry but may tear easily. (Fig.5.13)



Fig.5.13 Swag and Tail curtains
(Source: www. goodhousekeeping.com*)*

GENERAL POINTS IN CURTAIN CONSTRUCTION

1. Velvet and pile fabric should hang with the pile running downwards.
2. 15-30 cms should be allowed for hem and turning on each curtain.
3. For floor length curtains, it should be 1.5-2.5 cms. Above floor level to prevent friction.
4. The minimum width for any curtain should be one and half times or 2 times the width of the track.
5. The curtain heading may be gathered, pleated or held with tapes.
6. Lining should be fixed at the top and side of the curtain but not attached at the hem.
7. Hems and sides should be hand sewn but not machine stitched.
8. Heavy curtains may have weights or chains at the hem to improve the hang.
9. Flame retardant fabrics should be used in public rooms.
10. Draw cords or curtain controls should be used to pull the curtain.

CHARACTERISTICS FOR WINDOW TEXTILES

- It should have Warm handle
- Easy to care
- Good Durability
- Good dimensional stability
- Good color combination
- Fastness towards light is good
- It should have Sufficient weight

CARE AND MAINTENANCE

1. The rod and track should be kept free from dust by using wall broom or vacuum cleaner.
2. Curtains to be shaken to dislodge dust.
3. Fade edges, stains, detached hooks and gummed curtains should be dealt immediately.
4. Reverse double sided unlined curtains for fading.
5. Dry cleaning or solvent sprays should be used for brocade, damask curtains.

Exercise

Assignment

1. Collect photographs of various types of window textiles and prepare a chart.

Assessment

Answer the following questions:

1. Explain types of window textiles.
2. Explain various uses of window textiles.
3. What are swag and tail curtains?

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A

a) Explained meaning of curtain.
b) Explained various types of window textiles.

Part B

Discussed in class the following:
(a) Uses of window textiles.
(b) Various types of fabrics used for window textiles.

Part C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	Yes	No
Explain various types of finishes used for curtains.		
Explain types of fabrics used for window textiles		
Explain various types of curtains.		

Session 3: Bathroom Textiles

Relevant Knowledge

Bathroom textiles include shower curtains, bath robes, bath mats, bath rugs, towels etc. Shower curtains need to be water proof and so plastic coated textiles either of woven or non woven fabrics are in great demand.

TOWELS

A towel is a piece of absorbent fabric or paper used for drying or wiping. It draws moisture through direct contact, often using a blotting or a rubbing motion. Common household textile towels are made from cotton, rayon, bamboo, nonwoven fibres or a few other materials. The smallest forms of bath towels are called washcloths. These small squares of terrycloth (a textured cotton blend) are meant to assist bathers with lathering and gentle scrubbing.

The large sized towels are called hand towels and are used primarily near the bathroom sink. Hand towels feature many of the design elements of larger bath towels, so they should be coordinated. A small hanger or loop may be used to position the hand towels near the sink. Guests should use them primarily for drying their clean hands and faces, not as a larger substitute for a washcloth. (Fig.5.14)



Fig.5.14 Towels
(Source: http://www.livingenough.com/towels)

BATH MATS

Bath mats are generally thicker than standard towels for better absorption and traction. Bath mats should be colour-coordinated with the rest of the towels, but some standard sets may not offer them. Hosts may also choose a bath mat with a complementary colour scheme or a style which matches the shower curtains.

It gives feet a softer, warmer landing and gives bathroom a softer, warmer look. Bath mats also offer an easy way to update the bathroom. Place them in front of the tub, the toilet or sink — a wide range of sizes and colors makes it easy to find one to fit the space and style them. (Fig.5.15)



Fig.5.15 Bath mats
(Source: www.floormats.co.uk/sky-bath-mat-whit)

SHOWER CURTAINS

The advantage of using a shower curtain is that it can define the theme of the bathroom decor especially if they are the focal point when entering the bathroom.

Shower curtains come in a variety of colors, sizes and styles which will make it easy to coordinate with other bathroom accessories. The beauty of shower curtains is that they have two sides. They are water proof material which also adds a design element to bathroom. There are range of materials and styles available in the market. (Fig.5.16)



Fig.5.16 Shower curtains
(Source: www.bedbathandbeyond.com)

Types of Shower Curtains

- Linen Shower Curtain
- Cloth Shower Curtains
- Lace Shower Curtains
- Cotton Shower Curtains
- Hemp Shower Curtain
- Polyester Shower Curtain
- Toile Shower Curtain

TERRY TOWELING

Terry towels , bath mats , bathrobes, shower caps, baby hooded robe, terry bibs and napkins, terry gloves weaved on normal looms as well sulzer shuttle less looms in reactive AZO free unidyed / yarn dyed quality are available in plenty in textile market.

MATERIAL USED

- cotton
- polyester
- flax
- acrylic

Because of its absorbency and strength, cotton is the fabric of choice for bathroom textiles.

- Cotton towels are best for hands and bodies, while linen towels are best for dishes and glassware.
- Terry is the most absorbent of all weaves. It is an ideal towel for hand and body drying as it is looped both sides, thus increasing its surface area.
- Crash linen is a combination of linen, cotton and rayon that works really well for drying dishes. It helps to increase the evaporation rate.
- Damask linen works really well for drying glasses and dishes where lint-free results matter.
- Flax derived linen is super absorbent, and strong. It is naturally resistant to bacteria, won't leave lint on glassware, and absorbs 20 percent of its own weight in water.

CHARACTERISTICS FOR BATHROOM TEXTILES

- Soft feel
- Absorbent
- Water proof

CARE AND MAINTENANCE OF BATHROOM TEXTILES

Bath linens should be soft and absorbent, a cozy cocoon to wrap oneself in after a relaxing bath or shower.

- Chlorine bleach will weaken the fabric and cause yellowing. Hence it should be avoided.
- Always separate light and dark colors – and wash towels only with other towels to prevent pilling.
- Fabric softener should be used for washing towels, as this could make them less absorbent.
- Machine wash should be done using warm water and a non-chlorine bleach detergent.
- Tumble dry on low heat.

Exercise

Assignment

1. Collect photographic samples of various types of Bathroom textiles and prepare a chart.

Assessment

Answer the following questions:

1. Explain types of Bathroom textiles.
2. Explain various uses of Bathroom textiles.
3. What are Shower Curtains?

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A

a) Explained meaning of Bath Mats.
b) Explained various types of Bathroom textiles.

Part B

Discussed in class the following:

a) Uses of Bathroom textiles.
b) Various types of fabrics used for Bathroom textiles.

Part C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	**Yes**	**No**
State various types of bathroom textiles.		
Explain material used for bathroom textiles.		
State care and maintenance of bathroom textiles.		

Session 4: Table Textiles

Relevant Knowledge

Table linen and other table cloths include table mats, napkins, placemats, chair covers, chair mats and pads, table runners, coasters etc. For table cloths, cotton, linen, polyester etc. are extensively used. Jute, leather, plastic, silk satin are also used widely for other items like placemats, chair mats, table runners etc.

A tablecloth is a cloth used to cover a table. Some are mainly ornamental coverings, which may also help to protect the table from scratches and stains. Other tablecloths are designed to be spread on a dining table before laying out tableware and food.

Ornamental tablecloths can be made of almost any material, including delicate fabrics like embroidered silk. Dining cloths are typically made of cotton, a poly-cotton blend, or a PVC-coated material that can be wiped clean, but they can range from functional coverings to fine textiles, as long as they can be laundered. Some cloths are designed as part of an overall table setting, with coordinating napkins, placemats, or other decorative pieces. Special kinds of tablecloth include runners which overhang the table at two ends only and table protectors to provide a padded layer under a normal cloth.

TYPES OF TABLE CLOTH

Cloth Table Covers

Cloth table covers are perfect for venues and caterers alike, who are looking for an elegant appearance with a classic feel. The poly cotton to polyspun to 100% polyester and all is machine washable for easy laundering. Cloth table covers are specially designed for the heavy use that comes along with commercial applications, and can be reused time and time again, unlike one-time-use, disposable table linens. These table covers are often found in hotels, banquet halls, upscale restaurants, and at catered events.



Fig.5.17 Cloth Table Covers
(Source: www.webstaurantstore.com)

Poly cotton table covers, in particular, feature an even blend of 50% polyester and 50% cotton, for a product that lasts twice as long as 100% cotton. While these table covers give the softness of cotton, they ensure the wrinkle-resistance of polyester, too.

Along these same lines, polyspun table covers feature a similar blend, but with more polyester (65%) than cotton (35%). These table covers also ensure a soft feel to the touch, as well as the wrinkle-resistance of polyester, but come with the added benefits of

longer wear than poly cotton blends, and the resistance to fading, shrinking, and pilling, often found in 100% polyester (Fig.5.17).

Finally, 100% polyester table covers ensure the highest level of wrinkle, stain, shrink, and pill resistance out of all of the cloth table covers we carry, and are virtually lint-free. These table covers do not absorb liquids if spills occur, yet, like the other cloth materials, are machine washable for the convenience. They will not shrink on a long dryer cycle, and will retain their size throughout repeated washings.

Disposable Table Covers

These table covers come in varying materials, textures, and prices, and some are even available in roll table covers (as opposed to pre-cut, sized table covers) (Fig.5.18).




Fig.5.18 Disposable Table Covers
(Source: www.webstaurantstore.com)

Vinyl Table Covers



Fig.5.19 Vinyl Table Covers
(Source: www.webstaurantstore.com)

Outdoor eateries and other casual dining facilities often enjoy the look and convenience of vinyl table covers. These covers provide a longer life than disposable table covers, yet require less maintenance than cloth table covers and come in a variety of prints, patterns, and colors. They can simply be wiped clean after each use (no laundering necessary) and can be reused. Vinyl table covers are great for providing a quick, affordable, decorative change for the dining room, perfect for seasonal switches with the other décor (Fig.5.19).

TYPES OF FABRIC USED FOR TABLE TEXTILES

Plastic

Plastic tablecloths are thin plastic sheets that come in many colors and patterns. They are often sold in party stores or can be bulk ordered over the internet. Plastic tablecloths have little elegance and no real reusability factor since they are easily torn and stained. Plastic tablecloths are best for events like children's birthday parties and other casual functions.

Linen

Linen tablecloths are made from the fibres of the flax plant. Linen tablecloths have been a sign of luxury for hundreds of years as they were first used by wealthy families in the medieval period. White was the historical norm, but now linen tablecloths are available in a variety of colors.

Linen tablecloths are considered a fairly inexpensive and traditional choice. High quality linen tablecloths are especially popular due to the elegant, smooth, and cool to the touch attributes of linen. More durable than cotton, linen tablecloths are also fairly resistant to stains and can be passed on for generations if properly taken care of.

Whenever a touch of elegance is needed, linen tablecloths work well for occasions like a nice family dinner or special event.

Cotton

Cotton tablecloths are popular and inexpensive. Cotton tablecloths are one of the most versatile types in terms of possible colors and patterns. In addition, they are often blended with other materials to enhance certain properties.

For example, a 50/50 blend of polyester and cotton feels just as soft but is wrinkle resistant and twice as durable, while polyspun (typically 65% polyester and 35% cotton) is very long lasting and popular in the catering industry. In general, most cotton based tablecloths are easy to spot clean and usually only require washing and ironing to stay in good shape.

Cotton tablecloths can be used from casual daily dining in the kitchen to major events, such as at a formal party or reception.

Polyester

Polyester is a durable material that can be spun to duplicate linen weaves and other textures. It is often combined with cotton. While poly-cotton blends are popular, pure polyester has its own strengths.

Polyester is one of the easiest materials to take care of since it will not shrink when washed, keeps its shape well in the dryer, and naturally resists fading, pilling, and wrinkling.

With a silky and shiny appearance, polyester tablecloths are often used for formal events like weddings. Spun polyester napkins are often recommended since they feel soft like cotton but are durable and can hold a nice crease.

Vinyl

Vinyl is a synthetic material that falls in-between thin plastic and polyester and it is widely used in tablecloths. Vinyl is also used to make vintage records, flooring, and other items.

Fairly durable, vinyl tablecloths last better than other types of disposable tablecloths because they are thicker and water resistant. As a result, they are well suited for daily use with children or for family meals.

Organza

Organza is a unique specialty fabric popularly used to add hues and texture to table displays. Organza is perfect for creating beautiful and vibrant layers of color without being too bold. Especially if the main color is very strong, like a bright red, the light appearance of organza can help create a more formal atmosphere.

Organza is delicate material; it requires more gentle care than other types of fabric. It must be hand washed and left to air dry.

Satin

Satin is characterized by having one side look shiny while the other side is more matte. It is a reversible fabric. But unlike other glossy fabrics, quality satin has a very even sheen.

Satin tablecloths can be made from silk or polyester. Polyester based satin tablecloths are more common, less expensive, more durable, and machine washable.

CLOTH TABLE COVERS CAN COME IN SUCH FABRICS AS

- Cotton (100% Cotton)
- Poly Cotton (50% Cotton/50% Polyester)
- Polyspun (35% Cotton/65% Polyester)
- Polyester (100% Polyester)

TABLE LINENS CARE

Simple suggestions to ensure a long-lasting preservation of fine table linens are as follows:

- It is better to machine wash the table cloths in hot water for whites and in warm for colors.
- Pure soap is used for soft water and gentle detergent for hard water.
- Oxygenated bleach should be used for whites only – chlorine bleach can weaken the fabrics and cause yellowing.
- Rinse cycle should be used to remove all detergent. This will help avoid “age spots” which are caused by oxidation of the fibres.
- The stains should be treated when they are fresh. If allowed to set, stains may be impossible to remove at a later date.
- Delicate lace and embellished linens should be placed in laundry bag (or a pillowcase) before being placed in the washing machine.

Twisting or wringing out linens should be avoided before drying. It should be tumble dried on low setting until slightly damp.

Exercise

Assignment

1. Collect photographs of various types of table textiles and prepare a chart.

Assessment

Answer the following questions:

1. Explain types of table textiles.
2. Explain various uses of table textiles.
3. What are disposable table covers?

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A

a) Explained meaning of Vinyl table cover.
b) Explained various types of Table textiles.

Part B

Discussed in class the following:

a) Uses of Table textiles.
b) Various types of fabrics used for Table textiles.

Part C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	**Yes**	**No**
State various types of Table textiles.		
Explain various types of fabric used for table textiles		
Explain table linens care		

Session 5: Floor Textiles and its Types

Relevant Knowledge

Textile floor covering typically consisting of an upper layer of pile attached to a backing. The pile was traditionally made from wool, but, since the 20th century, synthetic fibres such as polypropylene, nylon or polyester are often used, as these fibres are less expensive than wool.

TYPES OF FLOORING

1) Soft flooring
    - Carpets and Rugs
    - Mats
2) Wood flooring
3) Hard flooring
4) Resilient flooring
5) Seamless chemical flooring

1) Soft Flooring

Soft flooring is defined as floor covering, usually of woven, knitted, or needle tufted fabric; commonly installed with tacks or staples or by adhesives. It does not apply to wall coverings or that for external use (Fig.5.20).



Fig.5.20 Soft flooring
(Source: www.floorscare.com)

(i) Carpets and Rugs

Carpets:
A carpet is a textile floor covering typically consisting of an upper layer of pile attached to a backing. The pile was traditionally made from wool, but, since the 20th century, synthetic fibres such as polypropylene, nylon or polyester are often used, as these fibres are less expensive than wool. The pile usually consists of twisted tufts which are typically heat-treated to maintain their structure. The term "carpet" is often used interchangeably with the term "rug", although the term "carpet" can be applied to a floor covering that covers an entire house, whereas a "rug" is generally no bigger than a single room, and

traditionally does not even span from one wall to another, and is typically not even attached as part of the floor.

Types of Carpet:

- Woven
- Needle felt
- Knotted
- Tufted
- Others

Woven: The carpet is produced on a loom quite similar to woven fabric. The pile can be plush or Berber. Plush carpet is a cut pile and Berber carpet is a loop pile. There are new styles of carpet combining the two styles called cut and loop carpeting. Normally many colored yarns are used and this process is capable of producing intricate patterns from predetermined designs (although some limitations apply to certain weaving methods with regard to accuracy of pattern within the carpet). These carpets are usually the most expensive due to the relatively slow speed of the manufacturing process. These are very famous in India, Pakistan and Arabia (Fig.5.21).



Fig.5.21 Woven
(Source: www.en.wikipedia.org)

Needle felt: These carpets are more technologically advanced. Needle felts are produced by intermingling and felting individual synthetic fibres using barbed and forked needles forming an extremely durable carpet. These carpets are normally found in commercial settings such as hotels and restaurants where there is frequent traffic (Fig.5.22).



Fig.5.22 Needle felt
(Source: www.wikipedia.org)

Knotted: On a knotted pile carpet (formally, a "supplementary weft cut-loop pile" carpet), the structural weft threads alternate with a supplementary weft that rises at right angles to the surface of the weave. This supplementary weft is attached to the warp by one of three knot types, such as shag carpet which was popular in the 1970s, to form the pile or nap of the carpet. Knotting by hand is most prevalent in oriental rugs and carpets. Kashmir carpets are also hand-knotted (Fig.5.23).



Fig.5.23 Knotted
(Source: www.floorwisewa.blogspot.in)

Tufted: These are carpets that have their pile injected into a backing material, which is itself then bonded to a secondary backing made of a woven hessian weave or a man made alternative to provide stability. The pile is often sheared in order to achieve different textures. This is the most common method of manufacturing of domestic carpets for floor covering purposes in the world (Fig.5.24).



Fig.5.24 Tufted
(Source: www.floorwisewa.blogspot.in)

Wall to wall carpet: Difficult to clean as it is difficult to shift, traffic lanes appear.
Pile carpet: Piece of thick heavy fabric attached to and covering the entire floor of a room.
Tackles strip: Small strip of wood covered with tacks and nailed or glued to the perimeter of the room; the pile carpet is fastened to it.
Underlay: Covering placed beneath the pile carpet to make walking more comfortable and to dampen noise.
Pile: Visible surface of a carpet made of raised fibres that are cut or looped. (Fig. 5.25)

Factors to be considered while Selecting a Carpet

- Selecting the right carpet for the right area is very important.
- The quality of the carpet has to be checked.
- Budget is also an important issue. Proper research on the carpets and comparison of the price is necessary.
- Maintenance factor should also be considered while selecting a carpet. A beautiful and stylish carpet can really add some elegance to the house thereby increasing its aesthetic value.
- The color of the carpet is a crucial issue.
- Carpet comes in different colors, designs, patterns, shapes and sizes.

Fibres and Yarns: Carpet can be made from many single or blended natural and synthetic fibres. Fibres are chosen for durability, appearance, ease of manufacture, and cost. In terms of scale of production, the dominant yarn constructions are polyamides (nylons) and polypropylene with an estimated 90% of the commercial market.

- Nylon
- Polypropylene
- Wool and wool-blends
- Polyester
- Acrylic

Materials of Carpets

- **Wool:** Has excellent durability, can be dyed easily and is fairly abundant
- **Nylon:** Nylon is the most common material, printed easily and has excellent wear characteristics. Nylon tends to stain easily because it possesses dye sites on the fibre.
- **Polyester:** Good physical properties and is inherently stain-resistant because it is hydrophobic
- **Polypropylene:** It is used to produce carpet yarns because it is inexpensive. Locked into place with latex then foam and jute sheet. Called Tufted Carpets
- **Acrylic:** Acrylic is fairly difficult to dye but is colorfast, washable and has the feel and appearance of wool making it an ideal rug fabric.

Care of Carpets

- Carpets should be daily cleaned using vacuum cleaners. Brooms should be used to get rid of hair (esp. pet hair).
- Carpets are to be washed once annually or bi-annually at laundry facilities.
- If the carpet gets stained with juice or any other similar substance, it should be washed immediately, with no delay, as such stains are harder to remove if left unwashed.
- Small carpets must be placed at the entrance of the house as this helps keeping dust away.

Rug:

A single piece of floor covering made with a pattern or a border with fringe. It is a Piece of thick heavy fabric usually having a nap and covering a section of the floor; it is removable. (Fig.5.25)

a. Area rug: Smaller rug used to emphasize an area.

b. Scatter rug: Very small rug used to complement room.

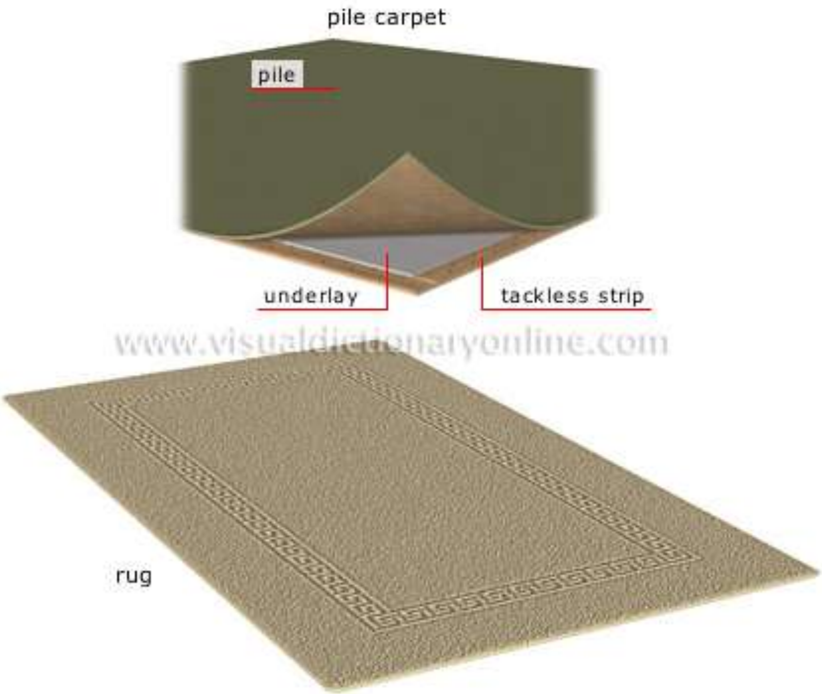


Fig.5.25 Carpets and Rugs
(Source:www.visualdictionaryonline.com)

(ii) Mats

Door mats helps to prevent from dirt, snow and moisture from being brought inside the door. Floor mats includes rubber mats, carpet mats, commercial entrance mats, coco mats, and water hog mats. Indoor mats can be placed on both on hard surfaces and carpeted floors. Door mats will not only help keep the entrances looking clean and new but these mats can significantly reduce cleaning costs and general wear and tear.

Carpet Mats

Carpet door mats are the most popular door mats. These carpet mats have an olefin surface, which wipes away dirt and moisture. Carpet mats are often used as door mats but are also available in much longer lengths for use as carpeted runner mats. Carpet mats are an economical option to help prevent dirt and water from being brought inside. To clean carpeted floor mats, it should be simply shakeout, vacuumed or hose down (Fig.5.26).

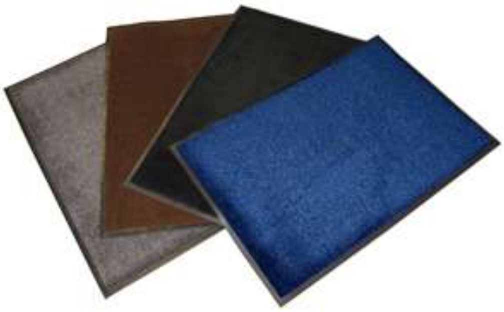


Fig.5.26 Carpet
(Source: www.homedepot.com)

Vinyl Mats

Vinyl mesh door mats are high quality floor mats designed for providing a safe, non-slip walking surface. They are constructed from durable and long lasting 100% vinyl. These indoor / outdoor floor mats feature a vinyl extrusion arranged in a random pattern for superb traction. The open mesh is ideal for capturing large amounts of debris and water, and allows air circulation for fast drying. Mats are available in several configurations: 1) as an open mesh mat, 2) open mesh with solid vinyl back (Fig.5.27).

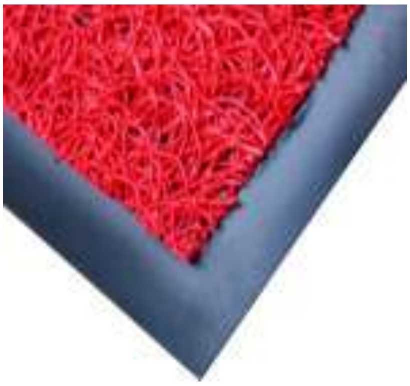


Fig.5.27 Vinyl
(Source: www.floormats.com)

Door Mats

The door mats are a raised square or "waffle" patterned mat that scrapes dirt and debris lodged in shoes and wipes away moisture. The polypropylene surface of the mat dries quickly and is stain-, fade- and mildew-resistant (Fig.5.28).



Fig.5.28 Door mats
(Source: www.floormats.com)

2) Wood Flooring

Wood flooring is any product manufactured from timber that is designed for use as flooring, either structural or aesthetic. Wood is a common choice as a flooring material due to its environmental profile, durability, and restorability. Bamboo flooring is often considered a form of wood flooring, although it is made from a grass (bamboo) rather than a timber (Fig.5.29).



Fig.5.29 Wood flooring
(Source: www.floortodoorfit.com)

3) Hard Flooring

Hard flooring (not to be confused with "hardwood") is a family of flooring materials that includes concrete/cement, ceramic tile, glass tiles, and natural stone products.

Ceramic tiles are clay products which are formed into thin tiles and fired. Ceramic tiles are set in beds of mortar or mastic with the joints between tiles grouted. Varieties of ceramic tiles include quarry tile, porcelain, terra cotta (Fig.5.30).



Fig.5.30 Hard flooring
(Source: hardwoodfloorsdiy.com)

Many different natural stones are cut into a variety of sizes, shapes, and thicknesses for use as flooring. Stone flooring uses a similar installation method live ceramic tile. Slate and marble are popular types of stone flooring that requires polishing and sealing.

Porcelain stoneware can be used instead of natural stone. It is a ceramic material like a tile; however, it is typically 20 mm (0.79 inches) thick and often comes in squares of 60 cm (24 inches).

Concrete/cement finished floor is also used for its ability to be treated for different feel and its durability.

4) Resilient Flooring

Resilient flooring products, such as PVC and polypropylene are becoming more popular in specialty applications such as trailer flooring and garage flooring. New applications have also emerged for marine flooring. There are important factors to consider in specialty applications that may not be present in a typical application. For example, certain tires will leave marks on PVC flooring but those marks will be less prevalent on polypropylene products. Adhesives also change based on application (Fig.5.31).



Fig.5.31 Resilient flooring
(Source: www.diyinahaer.com)

5) Seamless Chemical Flooring

Many different seamless flooring materials are available. These are usually latex, polyester, urethane or epoxy compounds which are applied in liquid form to provide a completely seamless floor covering. These are usually found in wet areas such as laboratories or food processing plants. These may have granular or rubberized particles added to give better traction (Fig.5.32).



Fig.5.32 Seamless chemical flooring
(Source: www.epoxy-sa.com)

Exercise

Assignment

1. Collect photographs of various types of floor textiles and prepare a chart in the file.

Assessment

Answer the following questions:

1. Explain types of floor textiles.
2. Explain various uses of floor textiles.

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A

a) Explained meaning of Knotted pile Carpet.
b) Explained various types of floor textiles.

Part B

Discussed in class the following:

a) Uses of floor textiles.
b) Various types of fabrics used for floor textiles.

Part C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	**Yes**	**No**
State various types of floorings.		
Explain types of floor textiles.		

Session 6: Upholstery

Relevant Knowledge

Upholstery with fabrics and its techniques had been mastered by the end of the 17thcentury, by borrowing splendid material and lavish trimmings. Initially these were detachable loose covers, which were later converted to fixed upholstery. These wrappings were supposed to be removed when the furniture was used. Tapestries, furniture and carpets beside silk damasks and velvets were mostly produced in France and Italy.

Upholstery is the padding or cushioning and covering of an item of furniture. The main aims are to provide comfort to the furniture and aid in the overall shape and form of the piece (Fig.5.33).

KINDS OF UPHOLSTERY

Traditional Upholstery

Traditional methods for covering the seats started with a timber frame. Webbing was then interlaced and stretched over the base of the seat frame and steel coil springs were stitched to each intersection of webbing and attached with cord at the top. Then a layer of horsehair or coir fibre filling evenly spread followed by a Hessian covering. It was then finished with a layer of hide (e.g. leather) or a woven fabric. This combination provided great comfort to a chair. The process for more utilitarian upholstery was to omit the springs and use a thick layer of the filling.

Modern and Commercial Upholstery

With the introduction of mass-produced furniture the more traditional form of upholstery has been superseded making use of advances in product and material development as well as revolutionary machinery.

The simplified version today used for seating is perforated plywood or MDF board as the base – attached to a timber frame (or metal or laminated ply, the list goes on) a synthetic foam or latex is used as the cushioning followed by a covering of fabric. In which there is now an endless choice of composition, from leather to polyolefin from hemp to silk.

TYPES OF FABRICS USED FOR UPHOLSTERY

Rayon upholstery

Rayon upholstery may be one of the worst options that one can use for furniture. Rayon is made and composed from fibre that comes from wood chips. The only positive aspects of using rayon for upholstery are that it is quite cheap, easy to work with and it is quite moth resistant. The disadvantages are it can shrink/stretch when damp, requires dry cleaning and it is extremely flammable.

Cotton upholstery

Cotton is a pretty popular fabric used to reupholster furniture. Cotton comes from natural plant fibre so it is one of the less processed forms of upholstery. It also dyes rather easily which is helpful for intricate designs and home decoration purposes. It is great at absorbing liquids, so it is a great fabric to have when there may be children in the house. It is resistant to moths, can resist normal amounts of sunlight without fading and in general it is pretty easy to care for. It does wrinkle easily and can catch on fire rather quickly unless treated previously.

Wool upholstery

Wool upholstery is very strong but often has trouble since it is a moth-attractant. It does rather poorly in sunlight so one should be careful to store the upholstered furniture in a darker area – but not one that will be close to dampness or moths. It is rather difficult to clean if any is spilt on it or makes it dirty and it will require dry cleaning.

Nylon upholstery

Nylon was actually the first synthetic fibre produced (in 1928) and one of the more popular types of upholstery fabric available on the market today. It is quite strong and resilient and still remains relatively easy to care for. It is also one of the more durable types of fibres.

Olefin upholstery

It is rather cheap and is heat sensitive, but can be stored it near a window that gets a lot of sunlight. The fibre is able to resist most water and liquid based stains, and it is also resistant to both chemicals and insects

Proper maintenance of any type of upholstery includes making sure the fabric is not always exposed to sunlight or damp areas.

FABRICS SUITABLE FOR UPHOLSTERY

Natural Fabrics

Linen: Linen is best suited for formal living rooms or adult areas because it soils and wrinkles easily. It will not withstand heavy wear. However, linen does resist pilling and fading. Soiled linen upholstery must be professionally cleaned to avoid shrinkage.
Leather: This tough material can be gently vacuumed, damp-wiped as needed, and cleaned with leather conditioner or saddle soap.
Cotton: This natural fibre provides good resistance to wear, fading, and pilling. It is less resistant to soil, wrinkling, and fire. Durability and use depend on the weave and finish. Damask weaves are formal; canvas (duck and sailcloth) is more casual and more durable.
Wool: Sturdy and durable, wool and wool blends offer good resistance to pilling, fading, wrinkling, and soil. Generally, wool is blended with a synthetic fibre to make it easier to

clean and to reduce the possibility of felting the fibres (causing them to bond together until they resemble felt). Blends can be spot-cleaned when necessary.
Cotton Blend: Depending on the weave, cotton blends can be sturdy, family-friendly fabrics. A stain-resistant finish should be applied for everyday use.
Vinyl: Easy-care and less expensive than leather, vinyls are ideal for busy family living and dining rooms. Durability depends on quality.
Silk: This delicate fabric is only suitable for adult areas, such as formal living rooms. It must be professionally cleaned if soiled.

Synthetic Fabrics

Acetate: Developed as imitation silk, acetate can withstand mildew, pilling, and shrinking. However, it offers only fair resistance to soil and tends to wear, wrinkle, and fade in the sun. It's not a good choice for furniture that will get tough everyday use.
Acrylic: This synthetic fibre was developed as imitation wool. It resists wear, wrinkling, soiling, and fading. Low-quality acrylic may pill excessively in areas that receive high degrees of abrasion. High-quality acrylics are manufactured to pill significantly less.
Nylon: Rarely used alone, nylon is usually blended with other fibres to make it one of the strongest upholstery fabrics. Nylon is very resilient; in a blend, it helps to eliminate the crushing of napped fabrics such as velvet. It does not readily soil or wrinkle, but it does tend to fade and pill.
Olefin: This is a good choice for furniture that will receive heavy wear. It has no pronounced weaknesses.
Polyester: Rarely used alone in upholstery, polyester is blended with other fibres to add wrinkle resistance, eliminate crushing of napped fabrics, and reduce fading. When blended with wool, polyester aggravates pilling problems.
Rayon: Developed as an imitation silk, linen, and cotton, rayon is durable. However, it wrinkles. Recent developments have made high-quality rayon very practical.

CHARACTERISTICS FOR UPHOLSTERED FABRICS

- Soft
- Comfort
- Hard wearing
- Stain – repellent finish



Fig.5.33 Upholstered fabrics
(Source: www.stuffitupholstery.com)

FINISHING FOR UPHOLSTERED FABRICS

- Fire – retardant finish
- Stain – repellent finish

CHOICE OF FABRIC DEPENDS ON THE FOLLOWING:

- Principles of design
- Personal and family use
- Cost
- Weaving
- Utility
- Beauty
- Comfortable- stain proof
- Colour
- Wear and tear
- Durability
- Quality

SELECTING THE BEST WEAVE

Fabric that is woven tightly tends to be more durable than fabric with a loose weave. Materials with looser weaves have threads that can be pulled easily. As with linens, the thread count in sofa upholstery determines the quality of the fabric. A higher thread count translates to better quality fabric. In addition, one should opt for fabrics with woven rather than printed patterns as woven patterns tend to wear better.

FABRIC CARE

One should always follow the care instructions when cleaning one's sofa. Care labels can usually be found sewn into the underside or seams of seat cushions. Some sofas can be cleaned with water-based products, while others fare better with solvents.

CONSTRUCTION

The way the upholstery fits on the sofa and the way cushions have been constructed affect the couch's durability. Good upholstery fits snugly, without wrinkles or creases. Linear patterns should be aligned from back to front and across the couch. Floral patterns should also be aligned across backs and seats. The stitching should be invisible or closely spaced. Arm and footrest covers, as well as washable slipcovers, will increase the sofa's lifespan and keep it looking better for longer.

CHOOSING THE RIGHT COLOR FABRIC

One should not only focus on the type of material with which the couch is covered. The sofa's color is also affected by its use and surroundings. A sofa in the family room is at greater risk of soiling and stains, especially in a house where children and pets are part of

the household. A light colored sofa would be a nightmare to keep clean, and one should opt for neutral color mixes like gray or taupe. These colors hide dirt marks well. Lighter colors are more appropriate for couches that are used less often. Patterns should match the room's existing decor, and neutrals work best in smaller spaces. Color trends tend to be fleeting, and it is best to choose a timeless color. Buyers can always add color accents by adding throw pillows.

Exercise

Assignment

Collect photographic samples of various types of Upholstery textiles and prepare a chart.

Assessment

Answer the following questions:

1. Explain types of Upholstery textiles.
2. Explain various uses of Upholstery textiles.
3. What are Olefin upholstery?

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A

a) Explained meaning of upholstery.
b) Explained various types of upholstery textiles.

Part B

Discussed in class the following:

a) Uses of upholstery textiles.
b) Various types of fabrics used for upholstery textiles.

Part C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	Yes	No
State various types of upholstery textiles.		
Explain various types of fabrics used for upholstery textiles.		

Session 7: Kitchen Textiles

Relevant Knowledge

As soon as one enters the kitchen, one needs a lot of kitchen textiles without which the activities in the kitchen are not possible. Some of these kitchen textiles include table mats, aprons, towels, pot holders, oven gloves, napkins, etc. These Kitchen textiles are usually made of cotton and linen fabrics. Linen fabrics are not just restricted to soft furnishings or for the quality sector of clothing design. It is a fabric very much in use for practical purposes. It is a fabric also made for the hard wearing kitchen or home. A linen fabric has the greatest qualities to absorb moisture, which is the reason why pure linen is used to tea towels and aprons (Fig.5.34).



Fig.5.34 Kitchen Textiles

MATERIALS USED FOR KITCHEN TEXTILES

- Cotton
- Cotton blends
- Silk
- Jute
- Rayon
- Polyester
- Linen



Fig.5.35 Kitchen and dining textiles

(Source: www.spelonca.com)

REQUIREMENT FOR KITCHEN TEXTILES

- Flame retardant
- Flame resistance
- Absorbent, durable, quick &easily washable
- Dryable,
- Color fastness.

TYPES OF KITCHEN TEXTILES

Kitchen Apron

An apron is an outer protective garment that covers primarily the front of the body. It may be worn for hygienic reasons as well as in order to protect clothes from wear and tear, or else due to a symbolic meaning.

The apron is commonly part of the uniform of several work categories, including waitresses, nurses, and domestic workers. Many homemakers also wear them. It is also worn as a decorative garment by women. Aprons are also worn in many commercial establishments to protect workers clothes from damage, mainly bib aprons, but also others such as blacksmith or farrier aprons.

In addition to cloth, aprons can be made from a variety of materials. Rubber aprons are commonly used by persons working with dangerous chemicals, and lead aprons are commonly worn by persons such as X-ray technicians who work near radiation. Aprons, such as those used by carpenters, may have many pockets to hold tools. Waterproof household aprons, made of oilcloth or PVC are suitable for cooking and washing dishes.

Types of apron:

- Bib apron
- Waist apron

Bib apron: Bib aprons are the most popular in the kitchen. They cover the upper body as well as the lower body. Due to fashion related demands, the bib apron has evolved to offer a variety of designs. There are some that have two ribbons running criss-cross across the back, halter neck tying styles, or simple sleeveless ones too. These are commonly available in cotton, multifarious colors, patterns and lengths (Fig.5.36).



Fig.5.36 Bib apron
(Source: www.spelonca.com)

Waist apron: A waist apron is one that is tied around the waist and covers the body from waist down. Today aprons have come to be known as decorative garments too which allow for the addition of an array of stylish design elements, frills, pockets, buttons. Lengths also vary depending on personal choice, some cover just the thigh area, whereas some aprons run right down to the shin. Commonly aprons are made out of cotton fabric, but lately they are being experimented with in towel fabrics, denim and more to create a fashion statement. Patterns and colors are unlimited; floral and fruit are very popular to match its use in the kitchen, however neutral designs also available making them unisex (Fig.5.37).



Fig.5.37 Waist apron
(Source: www.spelonca.com)

Kitchen Towel

A towel is a piece of absorbent fabric or paper used for drying or wiping a body or a surface. It draws moisture through direct contact, often using a blotting or a rubbing motion. In households, several types of fabric towels are used, including hand towels (small towels placed by a sink for drying the hands), bath towels (large towels for drying the hair and body after a bath or shower) and kitchen towels, which are used for drying dishes. In warm climates, people may also use beach towels, which are large towels used for drying off after swimming and for placing on beach surfaces. Common household textile towels are made from cotton, rayon, bamboo, non-woven fibres, and a few other materials. Paper towels are provided in commercial or office bathrooms for users to dry their hands. Paper towels are also used in households for a range of wiping, cleaning and drying tasks.

Types of kitchen towels: One of the most important but least thought about kitchen accoutrements is the kitchen towel. Available in a variety of attractive colors and patterns, kitchen towels can extend or complement the décor of the kitchen. But that is not their main function. To maintain a sanitary and efficient kitchen, several different types of kitchen towels, suited to different purposes, should be available.

The following type of towel should be available in one's kitchen:
• Dish towels for drying dishes, pots and pans, and kitchen implements after hand washing or dishwasher cleaning
• Glassware or tea towels
• Hand towels for drying hands
• Counter towels or bar mop towels for drying counters, cleaning up spills, etc.

Kitchen towels with different uses should be kept separate and not used for multiple purposes. Laundering the towels daily is another step to help ensure cleanliness.

Fiber and Weave: The fibre and weave of the towels are important factors in selecting the right towel for the job. Some kitchen towels need to be absorbent, while others chiefly need to be lint-free.

The main types of kitchen towel are:

- **Waffle weave** — Generally used with cotton fibre, this weave, also called honeycomb, produces an absorbent kitchen towel useful for drying large items such as pots and pans. Waffle weave towels can also be used as hand towels. Some manufacturers also offer a smaller waffle weave, which may be known as "mini."
- **Terry cloth** — This is a highly absorbent cotton material with loops. It is used for hand towels, for counter towels or bar mop towels, also called simply bar towels, and for dish towels.
- **Jacquard** — Made of cotton or "semi linen," which is a 50/50 cotton linen blend, jacquard towels is lint free, thus ideal for drying glassware. They also tend to have interesting color choices and elegant and complex patterns.
- **Flour Sack** — This multi-purpose cotton material is used for lint free towels that are not only used to dry glassware, but to line bread baskets, cover rising dough, polish silver, and dusting. Towels used for polishing and dusting should be kept separate from those used in food preparation and service or drying. This can be achieved by using different colors in order to distinguish which towels are for which task. These towels are absorbent enough that they can also be used as dish towels.
- **Flat Weave** — A 100 percent cotton towel that's absorbent, this type of towel can be used for drying dishes. When folded on itself, it doubles as a hot pad, useful for grasping hot pot handles or lids to move them safely.
- **Paper Towels** — Available in various absorbencies and weaves, paper towels are made to handle some of the jobs that formerly were exclusively done performed by cloth kitchen towels. While they cannot serve as potholders or make a good cover for rising dough, paper towels can wipe counters, clean up spills, line a bread basket, and in a pinch, dry a dish or glass and polish a shiny surface. They may also be useful for cleaning up surfaces contaminated with food such as raw meat, as well as for cleaning up a spill that could stain your cloth kitchen towel.

Made in plain white and with a variety of patterns, paper towels can also serve similar decorative functions to their cloth counterparts. Some brands use recycled paper and you may also find paper towels that are whitened without chlorine.

Kitchen Pot holder

A pot-holder is a piece of textile (often quilted) or silicone used to hold hot kitchen cooking equipment, like pots and pans. They are frequently made of polyester and/or cotton. Crocheted pot-holders can be made out of cotton yarn as a craft project/folk art.

A pot-holder offers protection for only one hand at a time. To lift a pan with two hot handles using both hands, two pot-holders are needed. For holding a hot piece of equipment, the pot-holder is folded around it and grasped with the hand.

When made of textile fabric, pot-holders typically have an inner layer of a material providing thermal insulation sandwiched between more colorful or decorative outsides. The most common type commercially available nowadays has the form of a square, with a side length varying from 5 inches (13 cm) to 10 inches (25 cm) and slightly rounded corners, and a textile loop at one of the corners for hanging (Fig.5.38).



Fig.5.38 Kitchen pot holder
(Source: www.amazon.in)

Oven Gloves

An oven glove, or oven mitt, is an insulated glove or mitten usually worn in the kitchen to easily protect the wearer's hand from hot objects such as ovens, stoves, cookware, etc.

Fabric gloves consist of heat insulation surrounded by cotton fabric, usually consisting of decorative patterns. Newer oven gloves are often treated with silicone, which makes them resistant to water and stains, or made of stronger synthetic materials such as Kevlar or Nomex.

Oven mitts are often sold singly rather than in a pair, designed to be worn on either hand (Fig.5.39).



Fig.5.39 Oven gloves
(Source: www.amazon.in)

Insulated Gloves

These are used for taking out and putting pans into the oven, when barbecuing, or for a fireplace fire. Some are suede leather and some are cloth. Some are made from high tech materials like Nomex® and Kevlar®. Some have long cuffs. Also available for less cost in mitt form (Fig.5.40).



Fig.5.40 Insulated gloves
(Source: www.spelonca.com)

Kitchen Mats

A mat is a generic term for a piece of fabric material it is used for many things, generally placed on a floor or other flat surface, which serves a range of purposes.

Kitchen floor mats are used for isolating areas, interlocking rubber tiles or to mat larger areas. They help to keep walking areas safe from food, grease and moisture. These are usually dense rubber mats that give comfort, fatigue relief and proper waste drainage. Along with these benefits, they are also anti- slip. Hence these mats can be used as they are attractive, lend a royal look to the kitchen and also help in maintaining feet and back.

TYPES OF KITCHEN FLOOR MATS

Drainage Rubber Mats

These are heavy duty, durable rubber mats. They are made up of 100% skid- resistant nitrile rubber which makes these floor mats oil, petroleum and grease proof. They also offer excellent anti- fatigue and anti microbial properties, which protect the mats from degradation by microorganisms and removes any odor. These rubber mats are easy to clean and can be washed in a commercial laundry machine (Fig.5.41).



Fig.5.41 Drainage rubber mats
(Source: www.amazon.in)

Comfort Zone Kitchen Mats

These mats have a drainage system and textured surface, which provides proper drainage and denigrates slippage. They have broad beveled borders on all the four sides and are best for standalone mat environment. They are grease- resistant and available in black and red with a 5/8'' thick profile. These mats also provide great anti-fatigue properties for people working in a wet or greasy environment (Fig.5.42).



Fig.5.42 Comfort zone kitchen mats
(Source: www.amazon.in)

Tea Towels

Tea towels are used as dish towels. Tea towel fabric can be used for quilts, table napkins, and sew-your-own dish towels. Some sources consider the tea towel to be above the dish towel and will only use tea towels on their finest glassware and cutlery. Tea towels are also used on tea trays and to cover scones and pastry.



Oven mitt



Potholder



Apron



Kitchen Napkin



Doilies



Kitchen Mats



Table Runner



Kitchen rug

Fig.5.43 Kitchen products

(Source: www.fiber2fashion.com/hometextiles/ kitchen)

Doilies

- Doilies are used wherever a napkin like cloth is needed
- Doilies can be square, round, oblong or even octagonal.
- Doilies range between 3" and 12" in size.
- A small cloth to place under cups or dishes to protect desks or any small table whose main purpose is to hold non food items.
- Size of Doilies - 9" round.
- Decorative purpose
- Releases stains easily
- Made of cotton or linen, polyester, blended C/P, etc,
- Lint free

- Size: 52” * 64”

Tea cozy

- It helps to keeps tea hot.
- It is a double thick base which protects the tabletop (Fig.5.44).



Fig.5.44 Tea cozy
(Source: www.amazon.in)

Activity
Collect the following samples or articles and display with their fabric details
1. Apron
2. Oven mittens
3. Table mats
4. Gloves
5. Kitchen towels
6. Tea towels

Exercise

Assignment

Collect photographic samples of various types of kitchen textiles and prepare a chart.

Assessment

Answer the following questions:
1. Explain types of kitchen textiles.
2. Explain various uses of kitchen textiles.
3. What is kitchen dish towel?

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A

c) Explained meaning of doilies.
d) Explained various types of kitchen textiles.

Part B

Discussed in class the following:

e) Uses of kitchen textiles.
f) Various types of fabrics used for kitchen textiles.

Part C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	Yes	No
State various types of kitchen textiles.		
Explain types of kitchen floor mats.		
Explain fibres and weaves for kitchen towels.		

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Apparel, Made-ups and Home Furnishing

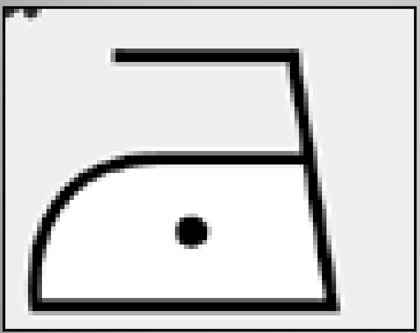
NSQF Level 2 – Class X

HSA 206-NQ2014 : GARMENT CARE AND MAINTENANCE

Student's Workbook







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Introduction

Clothing should be cared for in order to conserve and prolong their life. Clean, fresh, hygienic clothes, spotless bed-linen, immaculate towels, crisp and sparkling curtains are the outcome of successful laundering or dry-cleaning. Laundry is both an art and a science. It is a science in as much as it is based on the application of scientific techniques. But it is also an art science for which the application of scientific techniques requires the mastering of certain skills.

In the "good old days" laundry was done with soaps, scrub boards, wash tubs and lots of elbow grease. Today's advanced washing machines, hi-tech detergents and laundry additives make wash days easier and more successful, especially with the array of fabrics used in contemporary clothing. The laundry basics however haven't changed and are more important than ever.

Session 1 : Laundering

Relevant Knowledge

"Laundering" means not only washing of clothes it also includes proper drying and finishing. Laundry includes two different types of processes: laundering and dry-cleaning. Laundering is a process in which soils and stains are removed from textiles in an aqueous medium while dry-cleaning accomplishes these tasks in a non-aqueous solvent and agitation in it, in order to leach out the soil. Laundering covers a number of processes: washing, bleaching, drying and ironing. It may also include pretreatment, stain removal starching and softening. Laundry science helps to carry out all these processes effectively with a minimum wear and tear.

PREPARATORY STEPS BEFORE WASHING

i) Mending: Articles to be laundered are first examined carefully for any tears, or missing or loose buttons. They need to be stitched before washing.
ii) Stain removal: If there are some stains or marks of discolouration other than the dirt present on the articles, they should be removed separately or they might spread, get fixed or stain other fabrics in washing.
iii) Sorting: Articles to be washed should be sorted out on the basis of the fibre type i.e., cotton, woolen, silk, and synthetic; whites should be washed separately from colored ones. Also, very dirty articles like dusters should be washed separately from cleaner clothes.

LAUNDERING

Laundering of clothes involves the following Steps (Fig.6.1)

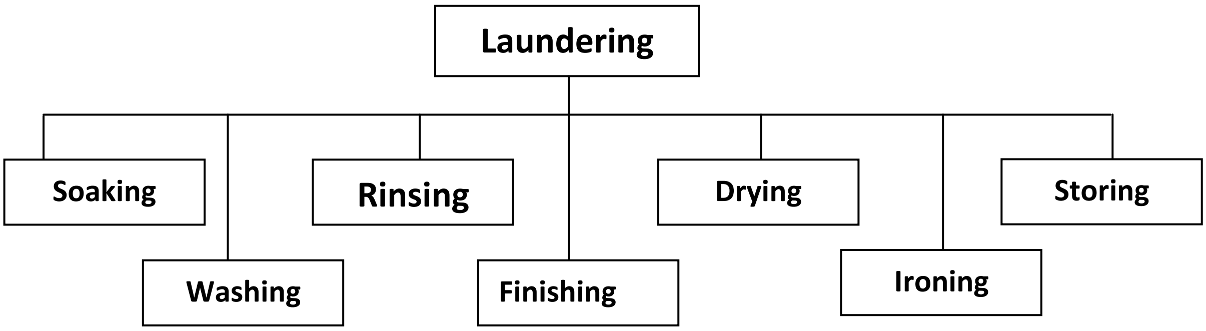


Fig.6.1 Process of Laundering

I. Soaking

Soaking helps to loosen the dirt from the fabrics, and this makes washing easier. All fabrics need not be soaked. For example, clothes which does not have colour fastener should not be soaked. Woolens are not soaked because soaking leads to felting. (Fig.6.2)



Fig.6.2 Soaking
(Source: www.wikihow.com)

II. Washing

Clothes are now washed using appropriate detergent/soap and also by selecting the right method of washing. Process of washing helps in releasing the dirt from the fabric. Soaked clothes must be washed soon. The process of washing involves removal of dirt that has been loosened from fabrics by soaking. There are many ways to do this and the choice depends on the fabric being washed.

Methods of Washing:
a) Friction method: This is the right method for washing strong fabrics like cotton and linen. The Friction can be applied in any of the following three ways.

(i) Hand friction: This is the most common method of washing clothes. The dirty areas should be rubbed vigorously with the hand until the dirt is removed. It is suitable for cleaning very soiled small sized areas in the garment like cuffs, collar and bottom of the lower garments, handkerchief and lace.

(ii) Scrubbing brush: The Scrubbing brush has to be used to clean the soiled kitchen dusters to remove dirt, grease and stains. The fabric has to be placed on a flat hard surface before scrubbing. Hard scrubbing can clean the fabric well but wears it out early. Scrubbing has to be used as per the nature of the fabric.

(iii) Beating stick: Wooden beating stick should be used to wash large clothes like bed sheets and to provide friction. This should be done only on a clean, flat and hard surface. The fabric is speeded on the floor; soap is applied and then beaten with the stick, constantly changing the surface of the fabric with the other hand.

b) Washing by kneading and squeezing: This method is for delicate fabrics like silk, wool, rayon, etc. This does not damage the fabric or change its shape because only gentle pressure is applied repeatedly with hands. While using this method the cloth is dipped in soap solution, is taken out and squeezed gently, again dipped in the soap solution. In between dirty areas are gently rubbed between two hands.

c) Washing in machines: 'Washing machine' a labor saving device and provides all the friction required for cleaning the clothes. The washing time varies with the type of fabrics and amount of soiling. For example, wool fabrics take less time for cleaning than cottons. Washing machines available in the market are automatic, semi-automatic and non-

automatic. The advantage of using automatic washing machine is that it has a spinner which can wring the clothes after washing to the extent that these are almost dry. This is especially useful while washing large and heavy articles like bedcovers, curtains, etc. The instructions about using the machine should be read carefully before using it. One should be careful while loading clothes for washing in a machine as the color of some fabrics may bleed and spoil the other clothes in the machine.

III. Rinsing

All soap/detergent and/or chemicals used must be removed from the fabric. Hence clothes are rinsed 2-3 or 4 times using fresh water every time. In fact rinsing should continue till all soap/detergent is removed (Fig.6.3).



Fig.6.3 Rinsing
(Source: www.wikihow.com)

IV. Finishing Agents

Finishing the garments with stiffening agents like starch and gum, brightening or bleaching agents, e.g. cotton dupattas and sarees are starched. Clothes must be starched if they need to be and also blued to return their whiteness.

V. Drying

White clothes are dried in sun and colored clothes are dried in shade. Silk, white or coloured, are dried in shade. Synthetics are dried on hanger and in shade. Woolens are dried in shade and flat on the floor (Fig.6.4).



Fig.6.4 Drying
(Source: www.wikihow.com)

VI. Ironing and Pressing

The last step of laundering is ironing. Clothes are ironed according to the nature of the fabric. (Fig.6.5) Cottons are sprinkled with water and ironed using hot iron. Silks are brought in while damp and ironed with hot iron. Synthetics and rayons are ironed with moderately hot iron. Woolens are pressed with hot iron but over damp muslin.



Fig.6.5 Ironing and Pressing
(Source: www.wikihow.com)

VII. Storing

Storing the garments for a short or long time, e.g. in winter season, summer clothes are stored while the woolen shawls, sweaters, coats etc. are used.

LAUNDRY PRODUCTS

Laundering products are substance used to remove dirt, including dust, stains, and bad smells, on surfaces. Purposes of laundry products include health, beauty, removing offensive odor, and avoiding the spread of dirt and contaminants to oneself and others. Some laundry products can kill bacteria and clean at the same time.

Successful laundry results start with the right laundry products. Laundry essentials are as follows:

1. Detergents

Detergents work to effectively remove soil and prevent lint and soil from re depositing on clothes. The proper amount and measure should be as per the instructions. Extra detergent is needed for large loads, extremely dirty clothes, or hard water. Likewise less detergent is required for small loads, lightly soiled clothes, or soft water. More laundry problems are usually caused from using too little detergent rather than using too much.

- Granular detergents are recommended for hard water conditions and when loads contain mud or clay soil.
- Liquid detergents are especially good for cold water washing and for cleaning greasy, oily stains.
- Detergent with bleach combines color-safe bleach with either granular or liquid detergent.
- Detergent with fabric softener both cleans and softens laundry.

2. Bleaches

Bleaches can keep washables whiter and brighter longer when is used in every wash load. Choosing the right bleach is easy:

- Household liquid bleach, identified by the words "sodium hypochlorite" in the ingredient listing is the only bleach that disinfects. It is also the most effective bleach for stain removal and whitening. This bleach is suitable for whites and colorfast garments.
- Color-Safe Bleach is bleach that is safe to use on washable, colored clothes. These bleaches are available in powder and liquids helps to remove stains and keep colors bright.

3. Fabric softeners

Fabric Softeners helps to reduce static cling, minimize wrinkling and soften clothes. Softeners are added to the final rinse cycle. These can be added automatically in washers equipped with a fabric softener dispenser. Otherwise, diluted softener must be added manually to the final rinse.

4. Water

Water plays a major role in laundry. The hardness or softness, level and temperature of water affect the laundry process. Soft water aids in the cleaning process, while hard water creates some problems. If water is hard, detergent should be added that the product label recommends. Both help to soften the water and increase the cleaning power of detergent. Choosing the proper water level and temperature is vital for best cleaning. Hot water is used to wash for white fabrics and heavily soiled colored fabrics. Warm water is recommended for very lightly soiled or brightly colored garments, and most other laundering needs. With increased concern for energy conversation, many consumers are lowering hot water heater thermostats as well as washing in cooler water, while this saves energy; laundry results are not always satisfactory. For effective cleaning, hot water heaters should be set no lower than 120 ^oF, but hotter water up to 140^oF gives better cleaning results.

LAUNDERING OF COTTONS

Laundering of cotton clothes requires the following steps:

1. Soaking

Only white cottons are soaked to loosen the dirt settled or stuck to the fabric. They are soaked preferably in warm or hot water for half an hour depending on how dirty they are. Very dirty clothes should be soaked separately for two reasons, one because these are soaked for longer duration and in hot water and soap/detergent. Secondly, the loosened dirt from very dirty clothes will settle on the less dirty ones and make them dirtier. It is much easier to clean soaked fabrics.

2. **Washing**

White clothes should be dipped in soap/detergent solution. Extra soap should be applied and rubbed on the heavily soiled areas. The light weight and lightly soiled cotton fabrics should be washed by using knead and squeeze method and big and heavy clothes using a stick. The areas which are very dirty have to be rubbed with hands or with a brush.

3. **Rinsing**

Cottons require application of a whitening agent in the last rinse. Also bluing agent is used which is available as powder or liquid. Optical brighteners are available in the market. These are colorless fluorescent dyes which turn pale fabrics white and make them look brighter temporarily.

4. **Starching**

Starching white clothes is another procedure which must be carried out before they are spread for drying. It is done to give cottons a smooth and shining fresh look. Also, starched articles do not get dirty easily. Two table spoons of starch mixed in 5 liters of water is sufficient for starching 4-5 clothes.

5. **Drying**

After rinsing, starching and bluing the clothes are dried. The clothes are hanged by their strongest part along the clothes line. Articles dried in the sun should be removed as soon as they dry. Over exposure to sunlight can weaken the fabric and cause yellowness.

6. **Ironing**

Cotton clothes are ironed best when they are evenly damp. But if they are starched they must dry completely before they are brought in. Water should be Sprinkled evenly on them, role them tightly and leave them for some time. Then it is opened one by one and iron with a hot iron. It has to be left to dry before storing.

7. **Storing**

Fungus (mildew) grows quickly on cotton fabrics. Hence, while storing cottons they should be completely dried.

LAUNDERING OF COLOURED COTTONS

- Do not soak cottons, especially when their color bleeds.
- Use mild or neutral soap for washing.
- Wash using kneading and squeezing method.
- Rinse thoroughly and apply starch after turning clothes inside out in the last rinse.
- Dry in shade.
- Iron clothes after making then evenly damp.

- Store clothes when completely dry.

LAUNDERING OF SYNTHETICS

- Nylon, polyester and acrylic are synthetic fibres. Hence laundering synthetics is slightly different. Only Luke-warm or cold water should be used. Hot water should not to be used as synthetics will wrinkle very badly as they soften and melt easily.
- Good quality of soap or detergents only to be used. Light pressure and light rubbing while washing.
- The clothes should be rinsed well in cold water to remove soap completely.
- To avoid wrinkles the clothes should not be squeezed tightly. Preferably it should be dried on a hanger. It will help to maintain the original shape of the fabric/ garment.
- When dry, if necessary, the clothes should be ironed with a warm iron and not with a hot one. (Refer to ironing temperature Table 1)
- Store when completely dry.

Table 1: Ironing Temperatures for Different Fabrics

Temperature		Fibre
Warm	150° C	Wool, Silk, Polyester and Nylon
Hot	180° C	Cotton and Rayon
Extra hot	200° C	Cotton and Linen

LAUNDERING OF SILKS

- Use Luke-warm or cold water, a good neutral soap, light pressure and light rubbing while washing. There is no need to soak silks.
- Rinse well in cold water to remove soap completely.
- Apply starch (Gum Arabic) and dry in shade.
- Pick up the clothes when evenly damp and iron with a warm iron as silk gets stained if water is sprinkled on dry clothes.
- Store preferably on hangers when completely dry.

LAUNDERING OF WOOLEN CLOTHES

- Woolens are more delicate than any of the fabrics used in the house.
- Wool has hairy surface which causes felting if handled roughly.
- Woolens need utmost care while washing.
- Knitted woolen clothes lose shape when wet, hence these need to be put back to shape after washing and need to be dried on a flat surface.

LAUNDERING OF KNITTED CLOTHES

- Take outline of the knitted dress on a paper before washing.
- Use mild alkaline soap/detergent dissolved in Luke warm water all through.
- Use kneading and squeezing method to wash. Rinse thoroughly.

- Knitted items must be brought back into shape by putting them back on the paper draft taken earlier and dried on flat surface in shade.
- Steam press if necessary.
- Store them when completely dry in a dry place either on a hanger or on a flat surface and along with naphthalene balls or odonil tablets.

Exercise

Assignments

1. Wash a soiled white cotton garment following the steps of laundering and write the method in the file.

Assessment

Answer the following questions:

1. Define laundering?
2. What are the various types of laundering products and their function?
3. Explain different types of laundering procedure for cotton, silk, wool and synthetics?
4. How does the laundering of synthetics differ from laundering of cottons?

Fill in the blanks with the most appropriate word from those given in brackets:

i. Soaking clothes for some time helps to ___________ dirt. (Loosen, fix, settle).
ii. Starching is done to give cotton clothes a _________ look. (Dull, crisp, shinning).
iii. __________ should not be starched. (Table linen, sarees, undergarments).
iv. Colored cotton articles should be dried in the ___________ (sun, shade, daylight).
v. Long exposure to sunlight makes fabrics __________ (bright, weak, dull).
vi. _____________ should be used to wash very dirty white clothes (hot water, boiling water, luke-warm).
vii. When cotton clothes are stored moist, they develop ____________ (dullness, brightness, mildew).
viii. Fabric that is not properly rinsed becomes __________ (weak, yellow, bright).
ix. Clothes must be ________ before washing. (Blued, mended, ironed).
x. _________ clothes should not be soaked before washing. (colored, white, dirty).

Tick marks the statements that are true. Correct the false statements.

i. Neutral liquid soaps should be used for washing silks. True/False
ii. Cold water should be used while washing woolen articles. True/False
iii. Wool articles should be soaked in water. True/False
iv. Wool articles can be cleaned with any detergent solution. True/False
v. Friction cannot be applied to clean woolen articles. True/False
vi. Synthetics are squeezed well before drying True/False
vii. Synthetics are ironed, if necessary, with a warm iron. True/False

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A

a) Explained laundering for different types of clothes.
b) Discussed preparatory steps before washing.
c) Differentiated between Bleaches and Fabric softners.

Part B

Discussed in class the following:

a) Various types of laundering products and their functions?
b) Laundering methods for different types of fabrics?

Part C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	Yes	No
Enlist various types of laundering products		
Explain laundering methods for different types of fabrics		

Session 2 : Stain Removal

Relevant Knowledge

Stain is an area of discoloration that penetrates the cloth surface, caused by a local deposit of soil or discoloration on a substrate cloth that exhibits some degree of resistance to removal, as by laundering or dry cleaning.

CLASSIFICATION OF STAINS

Stains are classified on the basis of their origin.

S. No.	Category of Stains	Stains
1	Vegetable stains	Tea, coffee, fruit, ketchup, chocolate, henna
2	Oil based stains	Butter, ghee, oil, curry, shoe polish, tar, oil paints, nail polish, lip stick, ball point pen
3	Animal stains	Blood, milk, egg, meat
4	Mineral stains	Rust
5	Miscellaneous stains	Dye, ink, mildew, grass, perspiration

STAIN REMOVAL METHODS

There are two methods of stain removal: (i) Sponging and (ii) Dipping.

Sponging

- An absorbent paper or fabric is placed under the stain so that the right side of the stain faces the absorbing surface. Sponging should always be done on the wrong side of the stain
- A soft cloth is taken and dipped in the stain-remover and gently rubbed on the stain starting from its outer corner moving inwards, towards the centre.
- Light, circular strokes are used as these prevent the stain from spreading.
- The absorbent paper or fabric (commonly known as blotter) must be changed as soon as it starts showing the stain.

Dipping

Dipping is the method in which the entire fabric can be immersed in the stain removing agent. It is suitable if there are many stains or a large stain on the fabric. We can choose the stain removing re-agent depending upon the type of stain.

Some of the common reagents used for stain removal are borax powder, ammonia, hydrogen peroxide, oxalic acid and ready to use bleaches. They are summarized in Table- 2.

Table 2: Stain Procedure

STAIN PROCEDURE	
Stains	**Procedure of Removal**
Vegetable Stains	
Cold drink /Tea / Coffee, Chocolate,	• Spread borax over the stains and Pour boiling water on it or steep in hot solution of borax with gentle rub on stain • Steep in glycerin overnight or for half an hour for softening of stain • Bleach with javelle water • Wash rinse well and dry in the sun. Do not iron
Ketchup	• Soak the stain in glycerin. Wash with warm water • Bleach with javelle water • Wash rinse well and dry in the sun. Do not iron
Henna (Mehandi)	• Dip in warm milk for half an hour • Soak the stain in glycerin. Wash with warm water • Bleach with javelle water • Wash rinse well and dry in the sun. Do not iron.
Animal Stains	
Blood/ Egg/ Meat/Milk	• Soak in salt water (2 table spoons of salt + ½ bucket of water), or in diluted ammonia • Bleach with hydrogen peroxide • Wash rinse well and dry in the sun. Do not iron as it fixes protein stains.
Oil based stains	
Butter, Ghee, Oil, Curry	• Wash with hot water, and detergent. Dry on grass or shrub/ plant in the sunlight. • Sponge with grease solvent (CCl_4) over blotting paper. • Bleach with Hydrogen peroxide. • Wash rinse well and dry in the sun.
Paint, Shoe polish, Nail polish, Lipstick, Ball pen	• Scrape all the excess stain • Sponge gently with methylated spirit or kerosene • Sponge with turpentine. • Bleach with Hydrogen peroxide. • Wash rinse well and dry in the sun.
Mineral stains	
Iron rust	• Apply dilute oxalic acid and neutralize with dilute borax solution • Bleach with H_2O_2. • Wash rinse well and dry in the sun.
Miscellaneous stains	• Mix 1 qt. household bleach, 3 qts. Water, 3 oz. • Scrub mixture into the surface using a stiff bristle brush or nylon scrubbing pad. • Follow scrubbing with a scouring powder.

	• Rinse thoroughly with clean, clear water and dry with a clean, soft cloth or towel.
Ink	• Lay the garment onto a thick cloth or towel – anything that will absorb water. • Apply a small amount of laundry detergent directly onto the stain, gently massaging it into the material. • Dab water onto the stain using a cloth or sponge.
Mildew	• Mix one cup of white vinegar in a bucket of water, and pre-soak the clothing for at least an hour. • Then launder in your washing machine at the hottest temperature possible with regular detergent. Alternatively, can directly add 250 ml of vinegar to washing machine per cycle and wash as normal.
Perspiration	• Crush and dissolve two aspirins into 1/2 cup of very hot water. • Dab the aspirin solution onto the sweat stain. • Let the solution work on the stain for 2-4 hours. • Apply a few drops of full strength laundry detergent on the stain right before washing.

Stain Removal Alkaline

- Soap (pure) – A mildly alkaline cleanser; useful for loosening oily or greasy stains; should not be used on fruit stains, as it will set them.
- Lemon juice - nature's bleach and disinfectant.
- White distilled vinegar – whitens/lightens.
- Hydrogen peroxide (3 percent type) – whitens/lightens.

PRECAUTION

While many stain removal chemicals and bleaches are commonly used around the home, they are still dangerous. Some are flammable; others are toxic. Here there are some rules to keep in mind regarding their use:

- Store stains removal materials out of the reach of children. Do not store with food products.
- Read all label directions and warnings. Store chemicals in their original containers so label directions are available in case of an accident.
- Use all chemicals and commercial stain removal product according to label recommendations.
- Avoid getting the chemicals on your skin. Some are easily absorbed.
- Use dry-cleaning solvents and other chemicals in a well-ventilated room. Toxic fumes can cause illness.
- Do not use solvents near an open flame or electrical outlet.
- Seal containers so that fumes can't escape.

- Never mix stains removal materials together (bleach and ammonia together form toxic fumes).

Activity

Aim

To remove stain from the washing cloth

Material Required

- Detergent – diluted solution of mild hand washing detergent without oily skin conditioners.
- Ammonia – undiluted household ammonia
- Vinegar – undiluted white vinegar.
- Solvent – dry cleaning solvent(spot remover)
- Blotting material – white cloth, paper towel or tissues.
- Various stained clothes

Procedure

Unidentifiable stains on a washable fabric should be laundered first. Then if any stain remains, try the following suggestions. In order, until the stain disappears. Test each cleaning agent on the fabric first the cloth should be checked for color fasteners, and then only the reagents may be tried.

Depending upon the type of fabric and stain any one of the following subsequent method could be followed,

1. Sponge the area with a non-flammable dry cleaning solvent to remove any possible oil. Then air-dry the fabric.
2. Apply a paste made from hand washing detergent bar / powder and gently rub. Let it stand for a while and repeat. Rinse well with water.
3. Soak it in cold water for at least 1/2 an hour.
4. Apply a liquid detergent solution (1 tablespoon in 1/2 cup of water) and a few drops of vinegar. Rinse thoroughly.
5. Apply a liquid detergent solution with a few drops of ammonia wash and Rinse.
6. Sponge with alcohol and pat with a pad of absorbent material dampened with alcohol. Allow the fabric to air-dry.
7. Launder, using bleach if it is safe for the fabric . (Check the garment label.) Air-dry until you are sure the stain is out.

Result

The stains have been removed from the fabric.

Exercise

Assignments

1. Prepare a chart by collecting samples of various stains and write its removal methods.

Assessment

Answer the following questions:

1. What is a stain? How would you classify stains?
2. For removing each of the following stains, tick (√) the most appropriate option:
   i) Old tea stain on white cotton fabric
      (a) Use salt water
      (b) Soak in glycerin
      (c) Soak in lime juice
      (d) Pour boiling water over borax
   ii) Old blood stains on coloured cotton fabric
      (a) Soak in salt water
      (b) Soak in glycerin
      (c) Soak in hot water
      (d) Wash with soap and hot water
   iii) Lipstick stain
      (a) Use of salt water
      (b) Soak in ammonia
      (c) Sponge with methylated spirit
      (d) Wash with hot water and soap
   iv) Rust stain
      (a) Use of salt water
      (b) Use lime juice and salt
      (c) Soak in methylated spirit
      (d) Wash with soap and cold water
   v) Nail polish stain on polyester fabric
      (a) Sponge with methylated spirit
      (b) Soak in warm borax water
      (c) Rub lime juice and salt
      (d) Soak in warm water and soap
3. Write a short note on stain removal method.

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A

(a) Explained Classification of stains.
(b) Procedure for removing different stains

Part B

Discussed in class the following:

(a) Various type of stains with examples

(b) Stain removal methods

(c) Precaution for stain removal

Part C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	Yes	No
Classify the stains		
Remove various stains		

Session 3 : Dry Cleaning

Relevant Knowledge

DEFINITION AND MEANING

Dry Cleaning can be defined as the cleaning of fabrics in a substantially non-aqueous liquid medium. This process has evolved during the last 75-80 years into a highly effective and safe method of removing soils from all types of textiles.

Dry cleaning is any cleaning process for clothing and textiles using a chemical solvent other than water. The solvent used is typically toxic tetrachloroethylene (perchloroethylene), which the industry calls "perc" or "PERC". It is used to clean delicate fabrics that cannot withstand the rough and tumble of a washing machine and clothes dryer; it can also eliminate labor-intensive hand washing. The original dry solvent technique removes oil-soluble stains. Current methods remove oil, many water-soluble and some insoluble materials with the help of detergents and various agents. The important distinction between dry and wet solvents is that the latter swell the hydrophilic textile fabrics while dry solvents do not. Dimensional changes that fibres undergo as they swell can cause fabric shrinkage, wrinkles, and color bleeding. Dry-cleaning solvents do not cause fibre swelling and do not cause shrinkage, wrinkles, and color bleeding. Also oily stains are removed at low temperatures in dry-cleaning while in laundering high temperatures are needed. Hence dry-cleaning is a safe method for cleaning delicate textiles. Fabrics sensitive to wet treatments can be cleaned effectively of oily stains by dry-cleaning.

Both laundering and dry-cleaning remove soil by the same mechanisms and similar operations. Garments are tumbled in the cleaning liquid in horizontal washers. Detergents are used in both cases to emulsify or solubilize the soils insoluble in cleaning liquid. In laundering bleaching agents are added and strong alkalis can be used to saponify fats. Saponification is not used in dry-cleaning but techniques have been developed to permit the use of some bleach in dry-cleaning.

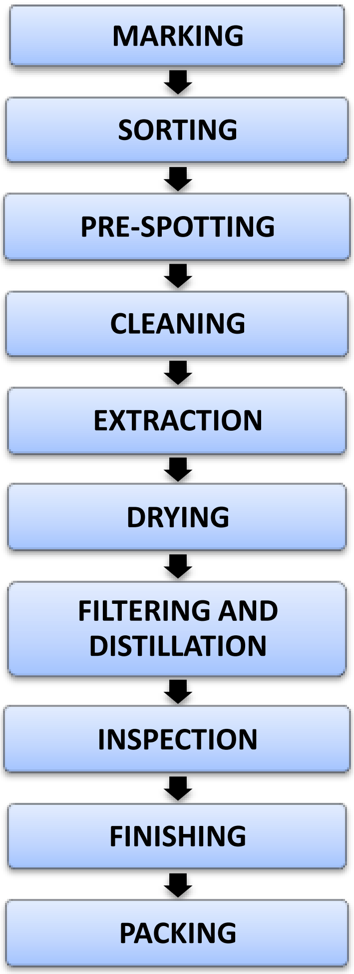
IMPORTANCE OF DRY CLEANING

1. Dry cleaning is possible for many fabrics for which washing is not suitable such as fur, felt, silk etc. Crepe fabrics can be cleansed very successfully by dry-cleaning. Velvet and other fabrics can easily be dry cleaned.
2. Dry cleaning is the best method of cleaning any garments with pleats, it does not remove the pleats as it does not wet the fabric.
3. Dry cleaning causes no shrinkage as water does. This provision has helped the people a lot as they can attain this facility at any point of time depending on their convenience.
4. Some kind of clothes requires more care as they are made of a fabric which cannot be washed in the machine, instead washing them in the same will ruin their grace and become unfit to wear. The cloths which have fine carving on them or professional suits which are costly enough and acquire a specific place on the person's heart, they prefer to send them to dry cleaners, as the methods involved in dry cleaning will clean them with precautions.

DRY CLEANING PROCESSES

A number of processes are involved in the dry cleaning operation. These processes are explained in detail below:

DRY CLEANING PROCESS



Marking

When the soiled garments are delivered at the laundry, they are first sent to the marking department. A tag - white piece of fabric with a number or some code stamped on it with indelible marking ink, is securely attached to the garment. Each article is treated individually to facilitate identification.

Sorting

The garments then pass on to the sorting department. At this point if there are any tears or seams that have ripped open the garment is sent for mending. Various types of garments are sorted out into different hampers so that each hamper contains only one class of garments and can hold a lead of about 45 kg. There are six major groups into which the cloths are sorted. These are –

- White and light colored cloths.
- Dark colored cloths.

- White and light colored woolens.
- Dark colored woolens.
- Draperies and furniture covers.
- Raincoats and windcheaters.

At this stage pockets are checked, cleaned and other parts of the garment showing dust or dirt are brushed and fancy buttons, buckles etc. are removed.

Pre-Spotting

Heavy soiled areas of the garment are treated with solvents. Volatile dry solvents like amyl acetate are applied to remove oil-borne stains while non-volatile solvents are used on paint and varnish stains. Water soluble stains such as perspiration are spotted with emulsifying agents (water and solvent mixed together). Some pre-spotters are digestive agents. They are mixtures of enzymes capable of digesting food stains. Pre-spotters are applied using a spotting gun which uses compressed air and helps spray the solvent on to the stain or heavily soiled area. Special spotting tables are equipped with steam guns, compresses air and spot removal chemicals. All chemicals used are removed.

Cleaning

The hamper bag of approximately 45kg is transferred to the dry-cleaning cylinder. Very delicate cloths are put in a net bag. Appropriate solvent is circulated through the cloths. The contact time of the cloths with the solvent and the rinse time vary according to the rate of flow of the solvent and the size and type of the hamper bag. This can vary from 5 to 45 minutes depending on fabric consumption and degree of soiling. The dry-cleaning machine is constructed in such a way as to provide mechanical agitation of the work-load. The horizontal drum has ribs built into help lift up the garments as the drum rotates. These garments then drop back into the solvent. Thus immersion and agitation of the garments in the solvent takes place, loosening the soil and dissolving it out. The drum is also perforated to allow the solvent to flow through.

Extraction

The excess solvent is removed from the garments by centrifugation or in a revolving perforated cylinder contained in a tumbler. Modern dry-cleaning machines perform the cleaning and the extraction in the same cylinder. The operators are not exposed to solvent vapors.

Drying

After extraction of excess solvents, the garments are dried in a drier which is a perforated drum enclosed in a tumbler. Hot air is passed through the cloths and is sucked out by an exhaust fan. The temperature is controlled to around 70^0C. Garments that might be damaged by tumblers are dried in a drying cabinet in which there is a fan.

Filtering and Distillation of the Solvent

Solvents are expensive and therefore filtered, distilled and re-used. They are not allowed to evaporate into the atmosphere. This also reduces the fire hazard and health hazard to workers in the laundry. Dry-cleaning solvents are purified by two processes:

- ***Filtration:*** The first filter is a mechanical one which holds back all solids such as dust, dirt particles, and lint. The solvent then passes through a filter of activated carbon or diatomaceous earth which clears the color of the solvent and also removes all greases, waxes and water.
- ***Distillation:*** The solvent is heated to its boiling point in an enclosed system. It evaporates, passes through condensers and the pure solvent is obtained. Oily and greasy soils which were dissolved by the solvent during the cleaning process remain behind and are removed. All traces of color, detergents and remaining water are removed at this stage.

Inspection

Dried garments are inspected to check that they are perfectly clean. If necessary, they are spot cleaned a second time. Wet cleaning may at times be carried out at this stage. In this operation each item is inspected individually. If any spots or stains are seen; the garment is sent back to the spotting department for their removal. The spotter has to posses a good knowledge of textiles fibres, fabric construction, dyes and chemicals. He should also have special skills and knowledge of techniques to be used. This will help him to know which stains can be removed without damage to the fabric and how to do this.

Finishing

In this process the garment is restored, as far as possible, to its original size, shape, feel and appearance. The extent to which this is possible depends on the quality of the fabric, the dyes used and the quality of tailoring.

Clean garments are pressed. This can be done on steam air forms which are of various styles or by finishing presses which are of two basic types; the grid head press used on woolens and the hot head press for silk and silk like fabrics. Both these types of presses have perforated bucks as the bottom plate. The grid head press has a perforated head, while the hot head press is smooth and non porous. The heads are heated internally by steam to a surface temperature of 149^0C. The garment is placed on the buck and pressure is exerted by lowering the head.

Proper use of these presses is a skilled art. Pressing is the most expensive operation in dry-cleaning. Many dry-cleaners provide special services. Besides garment repair, they also offer re-dyeing, water proofing, moth proofing, softener application, sizing etc. They also clean leather. Dyeing and application of finishes like water-proofing, moth-proofing, anti-static finish application etc. are each done in separate departments.

Packing

Buttons and buckles that had been removed are stitched back. Finally the garments are packed in paper or suspended from cloth hangers, covered with polyethylene bags and are ready for delivery.

THE ADVANTAGES OF DRY CLEANING

Dry cleaning is an essential part of keeping the wardrobe in the best condition possible. Here are some of the advantages of dry cleaning

1. **It's less abrasive.** The machine washing process—spinning in water, tossing in the dryer, being subject to heat—can wear down the fibres and material of clothing over time..
2. **There's no water.** When we clean clothes in water, colors can run and fabrics often break down or shrink. Dry cleaning preserves the integrity of the garment far better than washing does, and there's no risk of the appearance or size being altered.
3. **Finishing is done.** Some of the real time investment in doing laundry comes in the ironing, folding, and hanging stages.
4. **Items other than clothing can be dry cleaned.** There are limitations in what can be put in the washing machine; however dry cleaners are able to treat a host of household items beyond clothing.
5. **Care for particular fabrics**. Dry cleaning ensures that the fabric will be handled properly according to its needs, and it takes the off burden to decide how to treat it.
6. **Odours removal.** Certain types of odours, like those from smoke and water damage, are incredibly difficult to remove. Most dry cleaners have processes that can handle odours.
7. **Stain removal.** Similar to odours, stains that withstand most washing can often be eliminated during dry cleaning.

Exercise

Assignment

1. Rita has a basket full of soiled clothes. These include her silk blouse, zari saree, cotton shirt, cotton pyjama and woolen shawl. Which of these would you recommend her to wash at home and which clothes should she send for dry cleaning? Why?

Assessment

Answer the following questions:

1. Define Dry Cleaning
2. Explain about the process of dry cleaning
3. Write down the advantages of dry cleaning.

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A

a) Explained the process of dry cleaning.
b) Explained the advantages of dry cleaning.

Part B

Discussed in class the following:

a) Meaning of dry cleaning
b) Process of dry cleaning
c) Advantages of dry cleaning

Part C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	**Yes**	**No**
Explain the process of dry cleaning		
Explain the advantages of dry cleaning		

Session 4 : Care Label Symbols

Relevant Knowledge

Care label is a component or trimming of garment which contains some internationally recognized symbols that indicate the care instructions of the garment. These symbols are called care label codes.

HISTORY

The care label was introduced in Europe about 1950. It is a voluntary service so it was not regulated by any authority. It originated in the Netherlands and then spread to France and the other European countries as a voluntary service to the consumers offered by the textile and apparel industry. The care labeling code was protected by an international trademark, to control the correct application. The ownership of this international trademark belongs GINETEX, this International Association for Textile Care Labeling, has developed symbolic care labeling system in 1975.



Fig.6.5 Care label of international brand 'LEVI'S'
(Source: www.textilelearner.blogspot.com)

THE IMPORTANCE OF CARE LABELS

The Federal Trade Commission (FTC) requires that manufacturers attach a permanent care label to textile garments to provide directions for their care. Manufacturers must list at least one method of safe care for a garment. The rule covers all textile clothing except footwear, gloves, hats, suede and leather clothing, and household items such as linens. The rule stipulates that the care label is easily found, will not separate from the garment, and will remain legible for the garment's useful life. The label must warn about any part of the recommended care method that would harm the other garments cleaned with it. Symbols also may appear on a care label to supplement written instructions (Fig.6.6).

If a label indicates dry cleaning, all components of the garment, including the outer shell, lining, buttons, interfacing, fusing material, and trim, should be colorfast and remain unaltered during cleaning. If any such problem occurs, it is the responsibility of the manufacturer.

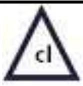
INTERNATIONAL STANDARD

ISO 3758 in the year 1991 provides a code of reference for the use of these symbols. The GINETEX care labeling system consists of five basic symbols for washing, bleaching, ironing, drying, dry cleaning and an extra symbol for wring.
The symbols and their descriptions are shown in the table.

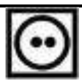
Washing

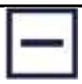
Symbol	Care Instructions	Meaning of Symbols
	Machine Wash (normal)	Garment can be washed using hot water, detergent, agitation, and any machine designed for garments washing.
	Machine Wash (cold)	Maximum temperature 30°C or 85°F Rinsing normal Spinning reduced
	Machine Wash (warm)	Maximum temperature 40°C or 100°F Rinsing normal Spinning normal
	Machine Wash (hot)	Maximum temperature 50°C or 120°F Rinsing normal Spinning normal
	Machine Wash (hot)	Maximum temperature 60°C or 140°F Rinsing normal Spinning normal
	Machine Wash (hot)	Maximum temperature 70°C or 160°F Rinsing normal Spinning normal
	Machine Wash (hot)	Maximum temperature 95°C or 200°F Rinsing normal Spinning normal
	Machine Wash (permanent press)	Garment is machine washed only on the setting designed to preserve permanent press with cold rinse prior to reduced spin.
	Machine Wash (gentle or delicate)	Garment is machine washed only on the setting designed for gentle agitation and reduced time for delicate items.
	Hand Wash	Garment is washed through the use of water, detergent and hand manipulation.
	Do not wash	Garment can't be safely washed by any process. Dry cleaning is applied.

Bleaching

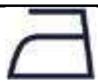
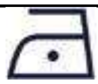
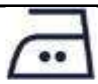
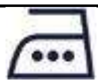
Symbol	Care Instructions	Meaning of Symbols
	Bleaching is allowed	Any commercially available bleaching agent can be used.
	Only chlorine bleaching is allowed	Only chlorine bleaching agent can be used.
	Only non-chlorine bleaching is allowed	Only non-chlorine, color-safebleaching agent can be used.
	Bleaching is not allowed	Bleaching agent can't be used.. The garment is not colorfast or structurally able to withstand any bleach.

Drying

Symbol	Care Instructions	Meaning of Symbols
	Tumble dry (normal)	Machine dryer is used at the hottest available temperature setting.
	Tumble dry (normal , low heat)	Machine dryer is used at a low heat setting.
	Tumble dry (normal , medium heat)	Machine dryer is used at a medium heat setting.
	Tumble dry (normal , high heat)	Machine dryer is used at a high heat setting.
	Tumble dry (normal , no heat)	Machine dryer is used at no heat or air only setting.
	Tumble dry (permanent press)	Machine dryer is used at the permanent press setting.
	Tumble dry (gentle)	Machine dryer is used at the gentle setting.
	Do not tumble dry	Machine dryer is not used. Usually accompanied by an alternate drying method symbol
	Do not dry	Machine dryer is not used. Usually accompanied by an alternate drying method symbol
	Line dry	Hang wet garment from bar, in or out doors. We use this in our country, it means hanging our dresses in rooftop for drying.

	Drip dry	Hang dripping wet garment from bar, in or out doors, without hand shaping or smoothing.
	Dry flat	Lay out horizontally for drying.
	Dry in shade	Can't dry in direct sunlight.

Ironing

Symbol	Care Instructions	Meaning of Symbols
	Iron in any temperature (steam or dry)	Ironing is required and can be performed at any available temperature with or without steam.
	Iron (low)	Regular ironing, steam or dry, is performed at low setting (110°C, 230°F).
	Iron (medium)	Regular ironing, steam or dry, is performed at medium setting (150°C, 300°F).
	Iron (high)	Regular ironing, steam or dry, is performed at high setting (200°C, 390°F).
	Do not steam	Steam ironing will harm garment, but regular dry ironing at indicated temperature setting is acceptable.
	Do not iron	Ironing is not allowed. Garment can't be smoothed or finished with an iron.

Dry Cleaning

Symbol	Care Instructions	Meaning of Symbols
	Dry clean	Dry cleaning in any solvent, any cycle, any moisture, any heat.
	Dry clean (any solvent)	Dry cleaning in any solvent. Usually used with other restrictions on proper dry cleaning procedure.
	Dry clean (any solvent, except trichloroethylene)	Any dry cleaning solvent except trichloroethylene can be safely used. Usually para-chloro-ethylene, white spirit of solvent-113 is used.
	Dry clean (petroleum solvent)	Dry cleaning is done using only petroleum solvent. Usually used

		with other restrictions. White spirit of solvent-113 is used.
	Dry clean (reduced moisture)	Can be used with A, P, F solvent restriction.
	Dry clean (short cycle)	Can be used with A, P, F solvent restriction.
	Dry clean (no steam)	Can be used with A, P, F solvent restriction.
	Dry clean (low heat)	Can be used with A, P, F solvent restriction.
	Do not dry clean	Dry cleaning is not allowed.

Wring

Symbol	**Care Instructions**	**Meaning of Symbols**
	Do not wring	Wring is not allowed.

Fig.6.6
(Source: www.textilelearner.blogspot.in)

Exercise

Assignments

1. Collect and study 3-4 labels of textile items/garments and prepare the following table in the file.

Name of the textile items/ garments	**symbols**	**Care instruction**

2. Collect care labels from different types of garment and paste in the file (Any 15).

Assessment

Answer the following questions:

1. Explain briefly about the history of care labels.
2. Explain the importance of care labels.
3. Enlist any 10 care label symbols.
4. Identify the care label symbols given below and write their care instructions.



Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A

(a) Explained importance of care labels.
(b) Explained various symbols with their care instructions.

Part B

Discussed in class the following:
(a) Meaning of care label/symbols
(b) Importance of care label/symbols

Part C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	Yes	No
Identify care label/symbols		
Explain meaning of care label/symbol		

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- http://www.intertek.com/uploadedFiles/Intertek/Divisions/Consumer_Goods/Media/PDFs/Services/Low%20Res%20CompleteCareLabelling.pdf
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Apparel, Made-ups and Home Furnishing

NSQF Level 2 – Class X

HSA 207-NQ2014 : STUDY OF INDIAN APPAREL INDUSTRY

Student’s Workbook





विद्ययाऽमृतमश्नुते

एन सी ई आर टी
NCERT

पं.सुं.श.केन्द्रीय व्यावसायिक शिक्षा संस्थान, श्यामला हिल्स, भोपाल

PSS Central Institute of Vocational Education, Shyamla Hills, Bhopal

Introduction

The textile industry is the largest industry of modern India. It accounts for over 20 percent of industrial production and is closely linked with the agricultural and rural economy. It is the single largest employer in the industrial sector employing about 38 million people. The structure of the textile industry is extremely complex with the modern, sophisticated and highly mechanised mill sector on the one hand and the hand spinning and hand weaving (handloom) sector on the other. This unit deals with the structure of apparel industry and about various departments in the apparel industry. Different job opportunities in apparel and fashion industry are available for people responsible for the inspiration, conception, production, sales, distribution and promotion of a fashion product that are discussed in this unit.

Session 1 : Structure of Indian Apparel Industry

Relevant Knowledge

STRUCTURE OF INDIAN TEXTILE INDUSTRY

The Indian textile industry mostly comprises of small-scale, non-integrated spinning, weaving and knitting, fabric finishing, and apparel-making enterprises. Other textile producing countries mainly have large scale mills with modern technology and machinery, that integrate spinning, weaving and sometimes fabric finishing.
This unique industry structure in India is primarily a result of government policies on tax, labour and other regulations that have promoted labour-intensive, small-scale operations often discriminating against larger scale firms.



Fig.7.1 Structure of India's Textile Industry

Composite Mills

Relatively large-scale mills that integrate spinning, weaving and, sometimes fabric finishing now account for about only 3 percent of output in the textile sector in India. Approximately about 276 composite mills are now operating in India, most owned by the public sector and many deemed financially "sick."

Spinning

Spinning is the process of converting cotton or manmade fibre into yarn to be used for weaving and knitting. Largely due to deregulation that began in the mid-1980s, spinning is considered the most consolidated and technically efficient segment of the industry. However average plant sizes remain small and technology is out dated, relative to other major producers.

Weaving and Knitting

Weaving and knitting converts cotton, manmade, or blended yarns into woven or knitted fabrics. This segment is highly unorganised with mostly small-scale and labour-intensive enterprises. The organised sector contributes only 5% of the total production. The segment has approximately about 3.9 million hand looms and 1.8 million power-looms in India.

Fabric Finishing

Fabric finishing also called processing includes dyeing, printing and other cloth preparation prior to the manufacture of apparels. This segment is dominated by a large number of independent, small scale enterprises. Overall, about 2,300 processors are operating in India, including about 2,100 independent units and 200 units that are integrated with spinning, weaving, or knitting units.

Apparels

Apparels are produced by about 77,000 small-scale units classified as domestic manufacturers, manufacturer exporters, and fabricators (subcontractors). According to a report by Wazir Advisors, the size of the Indian apparel market in 2012 was $ 45 billion. The report estimates India and China to be the fastest growing markets, growing in double digits and becoming the biggest consumer market with a mammoth share of 27% in the world's apparel market.

TEXTILE AND APPAREL SEGMENTS BY UTILITY

The textiles and apparel industry is broadly classified into the following segments:

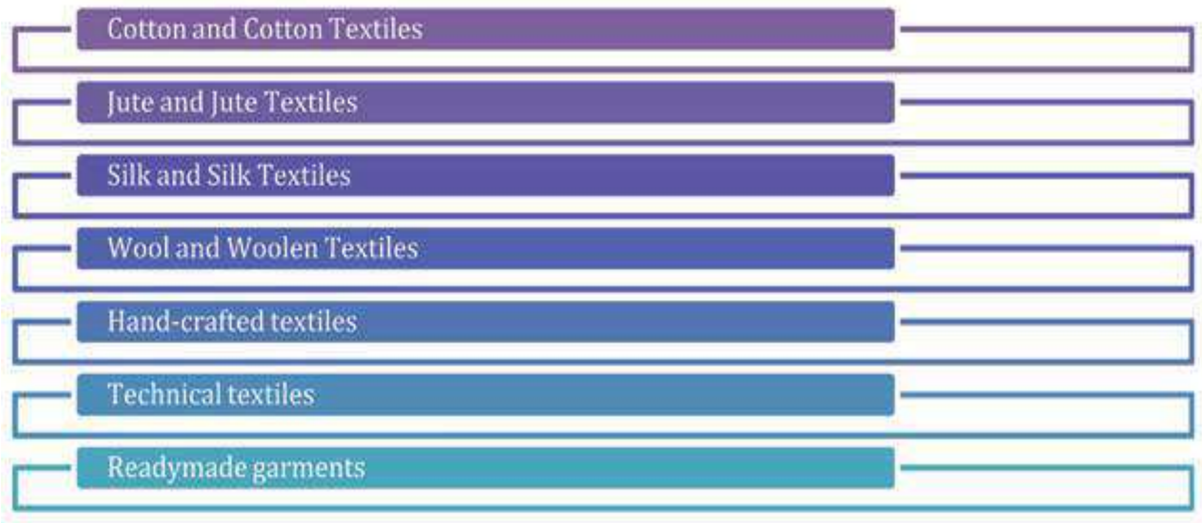


Fig.7.2 Textile and Apparel Segments by Utility
(Source: www.assocham.org)

Cotton and Cotton Textiles

The Indian textile industry which has a diverse range of fibres and yarn is predominantly cotton based. Hence, growth and all around development of cotton and cotton industry has a vital bearing on the development of the sector and the economy as a whole. According to the Ministry of Textiles, the consumption of cotton is more than 400 lakh bales (of 170 kg each) per year. The Cotton Corporation of India reports that the total production in 2013-14 rose to 375 lakh bales from 365 lakh bales in 2012-13.

Jute and Jute Textiles

Jute, the golden fibre, is considered to be a natural, renewable, biodegradable and eco-friendly product. According to the Ministry of Textiles, the jute industry provides direct employment to about 0.37 million workers in organised mills and in diversified units including the tertiary sector and supports the livelihoods of around 4 million farm families. There are 89 composite jute mills in India and about 49,500 looms installed in the jute industry including Hessian looms, sacking looms and others. The maximum installed capacity in jute mills is estimated to be more than 2.64 million tonnes per annum.

Silk and Silk Textiles

India is the second largest producer of silk in the world. According to the Central Silk Board, 10 26,480 MT of raw silk was produced in India in 2013-14, 74% of which (or 19,476 MT) was mulberry raw silk. The remaining 26% was wild silk (vanyasilk). Mulberry sericulture is mainly practiced in five states namely, Karnataka, Andhra Pradesh, West Bengal, Tamil Nadu and Jammu & Kashmir which jointly account for about 96% of the total mulberry silk production in the country. As the consumption of raw silk (around 29,740 MT) exceeds production, the additional requirement (particularly bivoltine mulberry silk of international quality) is imported mainly from China.

Wool and Woollen Textiles

The woollen industry is small and widely scattered. It is basically located in the states of Punjab, Haryana, Rajasthan, U.P., Maharashtra and Gujarat. 40% of the woollen units are located in Punjab, 27% in Haryana, 10% in Rajasthan, while the rest of the state's account for the remaining 23%.

Hand Crafted Textiles

The tradition of weaving by hand is one of the richest and most vibrant aspects of Indian cultural heritage. The level of artistry and intricacy achieved in handloom fabrics is unparalleled and beyond the scope of modern machines. The strength of the sector lies in its uniqueness, flexibility of production, openness to innovations, adaptability to the suppliers' requirements and the wealth of its tradition. Indian handlooms have been famous throughout the world for centuries and have been exported across the world.

TECHNICAL TEXTILES

Technical textiles are defined as textile material and products manufactured primarily for their technical performance and functional properties rather than aesthetic and decorative characteristics. It has applications across various industries including automobiles, civil engineering and construction, agriculture, healthcare, industrial safety, personal protection etc. The technical textiles segment is a high technology segment which is steadily gaining importance in India. Some of the properties of technical textiles that may be attributed to its increasing popularity are cost effectiveness, durability,

lightweight, high strength and user and eco friendliness. Based on usage, there are 12 technical textile segments, viz., Agrotech, Buildtech, Clothtech, Geotech, Hometech, Meditech, Mobiltech, Oekotech, Protech, Packtech, Indutech, Sporttech.

Segment	Application	Segment	Application
Agrotech	Horticulture + landscape gardening, agriculture + forestry, animal keeping	**Meditech**	Hygiene, medicine
Buildtech	Membrane, lightweight + massive construction, engineering + industrial building.	**Mobiltech**	Cars, ships, aircraft, trains, space travel
Clothtech	Garments, shoes	**Oekotech**	Environmental protection, recycling, waste disposal
Geotech	Road infrastructure, Railways, Irrigation and Hydraulic structures, Waste Landfills, Dams etc.	**Packtech**	Packaging, protective-cover systems, sacks, big bags, container systems
Hometech	Furniture, upholstery + interior furnishing, rugs, floor coverings	**Protech**	Person and property protection
Indutech	Filtration, cleaning, mechanical engineering, chemical industry	**Sporttech**	Sport and leisure, active wear, outdoor, sport articles

Fig.7.3 Segments of Technical Textiles by End use Application

(Source: Report of the Working Group for the Textiles & Jute Industry for the Twelfth Five Year Plan, Planning Commission)

In India the sector registered a compounded annual growth rate of 11% during 11th Five Year Plan. According to the Planning Commission's Working Subgroup on Technical Textiles, its market size is estimated to grow at a Compound Annual Growth Rate (CAGR) of 20% to reach ` 1,58,540 crores by 2016-17 from ` 70,151 crores in 2012-13. The market for 2014-15 is projected to be ` 1,09,659 crores.

READYMADE GARMENTS

Readymade garments (RMG) manufacturing being the least capital intensive segment of the textile value chain is characterised by low entry barriers and is hence highly fragmented. It is also labour-intensive and requires skilled, unskilled and semi-skilled manpower. A study by CARE Research12 says the domestic apparel industry in India grew at a CAGR of 9% from 1,360 billion in FY08 to 2,115 billion in FY13 and is expected to continue this growth trend to FY16. In 2012, apparels had a 69% share of the overall market; textiles contributed the remaining 31%. At the inauguration of the 55th India International Garment Fair, 2015 the Textiles Minister, supporting the apparel industry said that it plays a significant role in realising the 'Make in India' vision, given its employment and export intensity.

VARIOUS DEPARTMENTS IN APPAREL INDUSTRY AND THEIR FUNCTION

Apparel industry consists of different departments. Every department is responsible for better production. The various departments in a garment industry include:

- Merchandising Department
- Marketing Department
- Exports Department
- Finance Department
- Materials Department
- Production Department
- Finishing Department
- Sampling Department
- HR Department
- Quality Control Department
- Production Planning Department
- Maintenance Department

The functions of these departments are described below:

Merchandising Department

The various job responsibilities of this department include receiving or making the purchase order sheet, tracking the order, making the time and action calendar, getting and giving approvals, cost finalisation, pricing finalisation, supervising sampling, sourcing, vendor development, vendor selection, communication and coordination etc.

Marketing Department

The major responsibilities of this department include sales and promotion, advertising, visual merchandising, organising special events, public relation etc.

Export Department

The responsibility of this department includes making the export documentation, shipping the product, dealing with various government bodies, getting various licences, getting custom clearances etc.

Finance Department

Credits, payments, inventory control is the major responsibility of this department.

Material Department

The major job responsibility of this department includes material management, fabric ordering and receiving, trims ordering and receiving, keeping inventory record etc.

Production Department

The responsibility of this department include order processing, line balancing, production planning, setting production floor, ordering machine and equipment, maintaining optimum

output, ready the production order in time, getting the quality check done and shipping on time, control the cost etc.



Fig.7.4 Production Department
(Source: www.assocham.org)

Finishing Department

The function of the department includes pressing, tagging, packing, putting shipment stickers etc.

Sampling Department

The job responsibility of this department includes making samples on time, pattern making, marker making, calculating the consumption of material for various garments, new design development etc.

Quality Control Department

The major job responsibilities of the department includes understand buyer's quality specification, ensure the required quality is achieved and maintained, do the quality audits, quality inspection, shipment inspection, final inspection, online inspection, check size sets, check sealer samples, check the specification sheet etc.

Production Planning Department

The job responsibility of this department includes floor planning, line planning, order planning etc.

Maintenance Department

The job responsibility of this department includes maintain various machines and equipment, plant maintenance, store maintenance, servicing, repairs etc.

HR Department

Hiring new personnel, salaries, wages distribution, training of the workforce, record keeping etc. is done by this department.

Design Department

The main objective of this department includes designing new product and developing the product.



Fig.7.5 Design Department
(Source: www.assocham.org)

Exercise

Assignments

Collect pictures related to textile and apparel departments and prepare a chart.

Assessment

A. Answer the following questions:

1. Explain the structure of Indian textile industry?
2. Explain the departments under apparel industry?

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A
(a) Explained various departments of Apparel industry

Part B

Discussed in class the following:

(a) Discussed the structure of Indian textile industry.

(b) Discussed about the textile and apparel segments.

(c) Discussed different department of apparel industry.

Part C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	Yes	No
Understand the structure of apparel industry.		
Understand the departments in apparel industry		
Understand the textile and apparel segments		

Session 2 : Job Opportunities in Apparel Sector

Relevant Knowledge

JOB OPPORTUNITIES IN APPAREL SECTOR

Trend Forecaster

Trend Forecasters combine their knowledge of fashion design and history with consumer research and business information. Designers, retailers, and manufacturers working in the fashion industry subscribe to the forecaster's ideas.

Trend Forecasters do the following:

- Gives them an edge
- Their products are on the mark for their specific target market.
- Will have lower purchasing risks and greater opportunities to increase their sales volume.

As researchers, trend forecasters do the following:

- Provide new knowledge to designers, buyers, and product developers
- Assist in the development of new products
- Look for ways to improve old products

Forecasters search for facts and then analyse the findings to predict trends that will positively affect the amount and types of fashion products that consumers will buy.

Fashion Designer

Fashion designers create original clothing, accessories, and footwear. They sketch designs, select fabrics and patterns, and give instructions on how to make the products they designed. Fashion designers typically do the following:

- Study fashion trends and anticipate designs that will appeal to consumers
- Decide on a theme for a collection
- Use computer-aided design (CAD) programs to create designs
- Visit manufacturers or trade shows to get samples of fabric
- Select fabrics, embellishments, colors, or a style for each garment or accessory
- Work with other designers or team members to create prototype designs
- Present design ideas to the creative director or showcase them in fashion or trade shows
- Market designs to clothing retailers or directly to consumers
- Oversee the final production of their designs

The following are examples of types of fashion designers:

Clothing designers create and help produce men's, women's, and children's apparel, including casual wear, suits, sportswear, evening wear, outerwear, maternity clothing, and intimate apparel.
Footwear designers create and help produce different styles of shoes and boots. As new materials, such as lightweight synthetic materials used in shoe soles, become available, footwear designers produce new designs that combine comfort, form, and function.
Accessory designers design and produce items such as handbags, suitcases, belts, scarves, hats, hosiery, and eyewear.
Costume designers design costumes for the performing arts and for motion picture and television productions. They research the styles worn during the period in which the performance takes place, or they work with directors to select and create appropriate attire. They also must stay within the costume budget for the particular production.

Fashion Merchandising

Fashion merchandisers know style, but they also know how to get clothes into the hands of interested consumers. They develop skills in displaying, advertising, promoting, selling and buying fashions. A person trained in apparel merchandising may work in a variety of jobs, including fashion buying, public relations for clothing companies, showroom sales and catalog production.

Fashion Journalist

Fashion journalists work as writers and editors for fashion publications, including magazines, trade journals and websites. Writers in the field do interviews and research the field at libraries, on the Internet and at fashion shows. Fashion editors edit writers' work, write original material and plan upcoming magazine issues or publications. Writers and editors with knowledge of the clothing industry can also work in public relations for clothing manufacturers or designers.

Sourcing Manager

A Sourcing Manager is the individual responsible for sourcing production. His responsibilities include work with overseas or domestic producers, discuss product specifications, negotiate contracts, put production and quality controls in place and monitor production and delivery schedules.

Production Planner

A Production Planner is responsible for planning, anticipating all the parts needed to make the final product. The Production Planner review forecasts of sales, plan fabric production based on orders, schedule and monitor work in progress, work with manufacturers to

determine the availability of goods, collaborate with key departments to anticipate needs and meet strict deadlines to keep shipments on time.

Apparel Workers

Apparel workers cut fabric and other materials and sew it into clothing and related products. Workers in a variety of occupations fall under the heading of apparel workers. Tailors, dressmakers, and sewers make custom clothing and alter and repair garments for individuals. However, workers in most apparel occupations are found in manufacturing, performing specialized tasks in the production of large numbers of garments that are shipped to retail establishments for sale to the public.

Pattern-Maker

Pattern-Makers create the blueprint or pattern pieces for a particular apparel design. This often involves grading, or adjusting the pieces for different sized garments. Grading once was a time-consuming job, but now it is quickly completed with the aid of a computer. Markers determine the best arrangement of pattern pieces to minimize wastage of fabric. Traditionally, markers judged the best arrangement of pieces by eye; today, computers quickly help to determine the best layout. A large proportion of pattern makers are self-employed and do freelance works full time or part time in addition to holding a salaried job in design or in another occupation. Pattern Makers convert a clothing designer's original model of a garment into a pattern of separate parts that can be laid out on a length of fabric. After discussing the item with the designer, these skilled workers usually use a computer to outline the parts and draw in details to indicate the positions of pleats, buttonholes, and other features. (In the past, patternmakers laid out the parts on paper, using pencils and drafting instruments such as rulers.) Patternmakers then alter the size of the pieces in the pattern to produce garments of various sizes, and they may mark the fabric to show the best layout of pattern pieces to minimize waste of material.

Cutters

Before sewing can begin, pattern pieces must be made, layouts determined, and fabric cut. In less automated companies, cutters may use electric knives or cutting machines to cut pattern pieces. In more automated facilities, markers electronically send the layout to a computer-controlled cutting machine, and textile cutting machine setters, operators, and tenders monitor the machine's work. Cutters and trimmers take the patterns and cut out material, paying close attention to their work because mistakes are costly. Following the outline of the pattern, they place multiple layers of material on the cutting table and use an electric knife or other cutting tools to cut out the various pieces of the garment; delicate materials may be cut by hand. In some companies, computer-controlled machines do the cutting.

Sewer

Sewers usually sew the pieces, using sewing machines, and finish pleats, closures, decorative elements and other details. A few sew by hand, doing specialized tasks and finishing garments. Generally, pattern makers and sewers work in factories, although a few work for designers.

Laundry and Dry Cleaning Workers

Laundry and dry cleaning workers clean cloth garments, linens, draperies, blankets, and other articles. They also may clean leather, suede, furs, and rugs. When necessary, they treat spots and stains on articles before laundering or dry cleaning. They tend machines during cleaning and ensure that items are not lost or misplaced with those of another customer. Pressers remove wrinkles from items after steam pressing them or ironing them by hand. Workers then assemble each customer's items, box or bag them, and prepare an itemized bill for the customer.

Quality Control Manager

A Quality Control Manager is responsible for the final inspection of garments from the manufacturer. He checks fabric, fit, and construction for quality and adherence to product specification guidelines, responsible for training new and existing Quality Control Employees and for developing specific guidelines and standards for the company.

Photographers - Fashion & Glamour

Photographers produce and preserve images that paint a picture, tell a story, or record an event. To create commercial quality photographs, photographers need both technical expertise and creativity. Producing a successful picture requires choosing and presenting a subject to achieve a particular effect, and selecting the appropriate equipment. For example, photographers may enhance the subject's appearance with natural or artificial light, use a particular lens depending on the desired range or level of detail, or draw attention to a particular aspect of the subject by blurring the background. Using computers and specialized software, photographers also can manipulate and enhance the scanned or digital image to create a desired effect. Images can be stored on portable memory devices including compact disks (CDs) or on new types of smaller mini pocket storage devices such as flash disks, which are small memory cards used in digital cameras. Digital technology also allows the production of larger, more colorful, and more accurate prints or images for use in advertising, photographic art, and scientific research. Some photographers use this technology to create electronic portfolios as well. Because much photography now involves the use of computer technology. Photographers must have hands-on knowledge of computer editing software.

Retail Store Manager

A Retail Store Manager oversees all of the activities of a retail store’s operation

- Responsible for implementing the company's marketing and sales plans while ensuring the efficient operation of sales and administration within the store.
- Responsible for promoting sales, placing merchandise on the sales floor, monitor sales and inventory levels, manage personnel and generate profits.
- Share a vision of success and expectations about customer service, promotions, and store goals with all employees.

Clothing Retail Sales person

Retail sales person in the clothing industry offer style advice to customers, help with inventory, set up displays and gift-wrap purchases. With experience, they may be promoted to store management positions.

Merchandise Displayers and Window Dressers, or Visual Merchandisers

Merchandise displayers and window dressers plan and erect commercial displays, such as those in windows and interiors of retail stores or at trade exhibitions. Those who work on building exteriors erect major store decorations, including building and window displays and lights. Those who design store interiors outfit store departments, arrange table displays, and dress mannequins. In large retail chains, store layouts typically are designed corporately, through a central design department. To retain the chain's visual identity and ensure that a particular image or theme is promoted in each store, designs are distributed to individual stores by e-mail, downloaded to computers equipped with the appropriate design software, and adapted to meet the size and dimension requirements of each individual store. Designers may transact business in their own offices or studios or in clients homes or offices. They also may travel to other locations, such as showrooms, design centers, clients exhibit sites, and manufacturing facilities. Merchandise displayers, Window Dressers and Visual Merchadisers as well as fashion designers who are paid by the assignment are under pressure to please clients and to find new ones in order to maintain a steady income. With the increased speed and sophistication of computers and advanced communications networks, designers may form international design teams, serve a geographically more dispersed clientele, research design alternatives by using information on the Internet, and purchase supplies electronically, all with the aid of a computer in their workplace or studio. A large proportion of designers are self-employed and do freelance works full time or part time in addition to holding a salaried job in design or in another occupation.

Promotion Director

A Promotion Director guides the marketing activities of the retail store. Responsible for

- Knowing which media types are most effective for different types of promotions
- Institutional advertising
- Promotional campaigns
- Signage, displays, hangtags, labels, shopping bags, and fliers

Advertising Director

An Advertising Director of a retail company develops and implements the company's advertising strategy for the purpose of increasing sales.

- Selects the venue, or media form, for the advertisements
- Work to position their company relative to the competition
- Work with support departments to develop a promotional campaign

Special Events Coordinator

A Special Events Coordinator increases the visibility of a company by coordinating fashion events that provide exposure.

- Events include trunk shows, fashion shows, bridal shows, parties, educational events, and book signings
- Responsibilities range from securing a site to soliciting sponsors, to developing commentary, to take care of printing needs.

Exercise

Assignments

Collect name, pictures and details of any five famous Fashion Designer of Indian Apparel Industry and prepare a chart.

Assessment

A. Answer the following questions

1. Explain the role of Merchandiser
2. Explain the role of Pattern Maker.

A. **Multiple Choice Questions**
   Tick the most appropriate answer from the choices given below:

1. ------------------------- guides the marketing activities of the retail store
   (a) Promotion director
   (b) Both (a) & (d)
   (c) Retail salespersons
   (d) Retail store manager

2. ----------------------- usually sew the pieces, using sewing machines, and finish pleats, closures, decorative elements and other details.
   (a) Cutter
   (b) Sewer
   (c) Pattern maker
   (d) None

Checklist for Assessment Activity

Use the following checklist to see if you've met all the requirements for assessment activity.

Part A
(a) Explained about the career opportunities available in an apparel industry.

Part B
Discussed in class the following:
(a) Discussed the job roles and responsibilities of each career in an apparel industry.

Part C
Performance Standards
The performance standards may include, but not limited to:

Performance Standards	Yes	No
State the various types of jobs in apparel industry.		
Explain the responsibilities of each job in apparel industry.		

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